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(71) Applicant (for all designated States except US): AIR-
WALK INTERNATIONAL LLC [US/US]; 800 Engle-
wood Parkway, Englewood, CO 80110 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): SYMONS, Do-
minic, P. [CH/CH]; 800 Englewood Parkway, Englewood,

CO 80110 (US). BABCOCK, Joseph, G. [US/US];
800 Englewood Parkway, Englewood, CO 80110 (US).
KLEINER, Randall, A. [US/US]; 800 Englewood Park-
way, Englewood, CO 80110 (US).

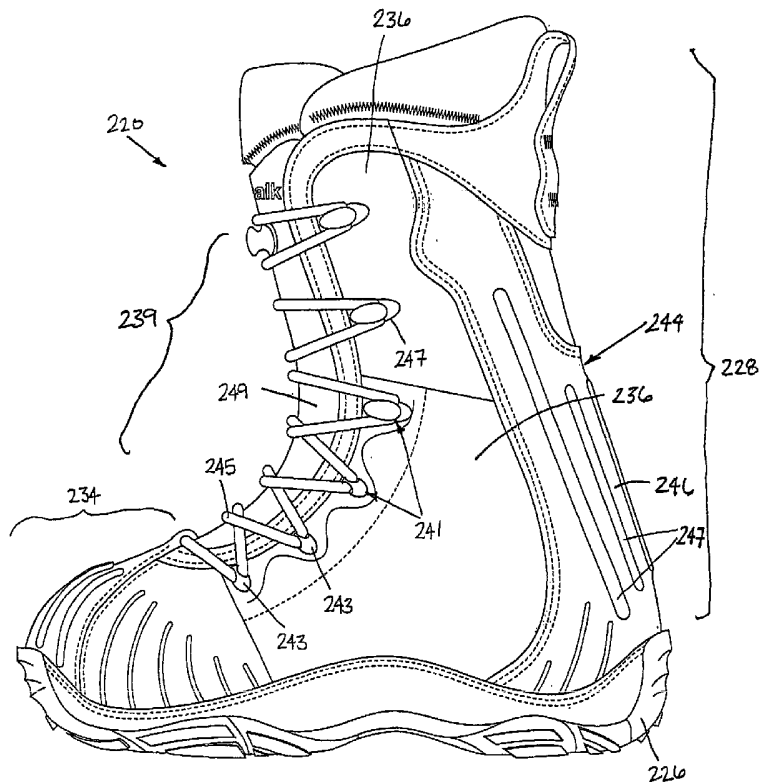
(74) Agents: DIEDRICH, Bradley, J. et al.; Rader, Fishman
& Grauer PLLC, Suite 140, 39533 Woodward, Bloomfield
Hills, MI 48304 (US).

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(54) Title: SPORT BOOT



(57) Abstract: A sport boot (20) is provided that is suitable for, but not limited to, use as a snowboard boot. The sport boot (20) includes an outer shell (22) and an inner liner (24) received within the outer shell (22). The outer shell (22) includes an outsole (26) and a protective upper (28) affixed to the outsole (26). The inner liner (24) includes a cushioning midsole (48) and a flexible upper (50) affixed to the midsole (48). Unlike conventional sport boots that place the midsole between an insole board and a shank on the outer shell, the present invention incorporates the midsole (48) onto the inner liner (24) directly under a rider's foot to provide a level and more stable platform. With the midsole (48) built into the inner liner (24), there is an improved relationship between the horizontal plane a rider's foot lies in and the horizontal plane of the midsole (48). When attached in this manner, a rider's foot and the midsole (48) more effectively remain in parallel planes, which improves the overall comfort and performance of sport boot (20).

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SPORT BOOT

FIELD OF THE INVENTION

[0001] The present invention relates generally to a sport boot and more particularly to a sport boot having a removable liner that includes a midsole attached thereto.

BACKGROUND OF THE INVENTION

[0002] In the sport of snowboarding it is desirable to have boots that provide both support and mobility. When riding a snowboard it is important that the rider has sufficient resistance against undesirable ankle rotation about both longitudinal and latitudinal axes to minimize potential injury to the ankle joint. The most common and most severe ankle injuries are typically caused by inversion, *i.e.*, the internal rotation of the ankle joint, and eversion, *i.e.*, the external rotation of the ankle joint. For snowboarding, regulation of dorsiflexion, *i.e.*, the toe-down motion of the foot at the ankle, and plantar flexion, *i.e.*, the toe-up motion of the foot at the ankle, is important since it provides a rider with more power to steer and guide the snowboard. However, the boot cannot be too rigid where it hinders the rider's ability to naturally flex the ankle joint and to maintain necessary balance and control.

[0003] When riding a snowboard it is also desirable that the rider has sufficient resistance to impact forces applied to the bottom of the foot and unnecessary foot movement above the snowboard. Positioning the cushioning materials and foot support apparatus in close proximity to the foot will improve comfort and bottom foot support, providing greater boot performance.

SUMMARY OF THE INVENTION

[0004] In accordance with the present invention, a sport boot is provided that is suitable for, but not limited to, use as a snowboard boot. The sport boot includes an outer shell and an inner liner received within the outer shell. The outer shell includes an outsole and a protective upper affixed to the outsole. The inner liner includes a cushioning midsole and a flexible upper affixed to the midsole. Unlike conventional sport boots that fix the midsole between an insole board and a shank in the outer shell, the sport boot of the present invention incorporates the midsole into the inner liner directly under the rider's

foot to provide a level and more stable platform. With the midsole built into the inner liner, there is an improved relationship between the horizontal plane the rider's foot lies in and the horizontal plane of the midsole. When positioned in this manner, the rider's foot and the midsole more effectively remain in two parallel planes.

[0005] Positioning the midsole in the inner liner also allows a shock absorbing component and a support shank to be brought closer to the rider's foot to maximize the resistance to impact forces and improve foot support.

[0006] In an embodiment of the present invention, the inner liner includes at least one stabilizer having a base and at least one finger-like stabilizing element that extends along the flexible upper. The stabilizer regulates eversion and inversion of the ankle, and resists flexion substantially perpendicular to the ankle axis, *i.e.*, the axis extending from the medial to the lateral side of the foot. A tongue stiffener may also be included in the inner liner to regulate flexion about the ankle axis, *i.e.*, in the direction of the plantar and dorsiflexion plane.

[0007] Various additional aspects of this invention will become apparent to those skilled in the art from the following detailed description of the preferred embodiments, when read in light of the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a break-away perspective view of a sport boot according to an embodiment of the present invention, showing an outer shell and an inner liner received within the shell.

[0009] FIG. 2 is a side elevation view of the sport boot of FIG. 1.

[0010] FIG. 3 is a rear elevation view of the sport boot of FIG. 1.

[0011] FIG. 4 is a side elevation view of a sport boot according to another embodiment of the present invention.

[0012] FIG. 5 is a rear elevation view of the sport boot of FIG. 4.

[0013] FIG. 6 is a side elevation view of a sport boot according to another embodiment of the present invention.

[0014] FIG. 7 is a rear elevation view of the sport boot of FIG. 6.

[0015] FIG. 8 is a side elevation view of an inner liner according to an embodiment of the present invention.

[0016] FIG. 9 is a front view of a tongue and tongue stiffener that is attached to the inner liner shown in FIG. 8.

[0017] FIG. 10 is a bottom view of a midsole according to an embodiment of the present invention.

[0018] FIG. 11 is a side elevation view of an alternate embodiment of the inner liner.

[0019] FIG. 12 is a side elevation view of another alternate embodiment of the inner liner.

[0020] FIG. 13 is a cross-sectional view of a stabilizer taken along lines 13-13 in FIG. 8.

[0021] FIG. 14 is a partially hidden view showing an inner net within an inner liner of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0022] Referring now to the drawings, the preferred embodiments of the present invention will be described in detail. FIG. 1 illustrates a sport boot 20 that is suitable for, but not limited to, use as a snowboard boot. Accordingly, because sport boot 20 may be worn for snowboarding purposes, a person wearing sport boot 20 shall be referred to herein as a rider. The term "binding" as used herein shall refer to a conventional snowboard binding that is used to attach a rider's sport boot to a snowboard.

[0023] Sport boot 20 includes an outer shell 22 and an inner liner 24 removably received within outer shell 22. Outer shell 22 generally includes an outsole 26 and a protective upper 28 affixed to outsole 26. Outsole 26 is fastened to protective upper 28 in any suitable manner, such as with an adhesive, stitching and the like. Outsole 26 functions to protect inner liner 24 from the under-foot environment and as a means of providing traction. Superior traction is achieved through the use of an aggressive multi-height tread pattern formed from a polymeric material, such as rubber or a thermoplastic urethane (TPU). Although various tread patterns may be employed, the tread pattern on outsole 26 preferably provides improved tactile control and a low profile for weight reduction.

[0024] Protective upper 28 is made from natural and/or synthetic materials, such as water-resistant fabrics or textiles, leather, suede, composites, polymers or a combination of some or all of these materials. More specifically, protective upper 28 includes a water-resistant skin 30 disposed around the mudguard portion of outer shell 22 just above outsole

26. Skin 30 is secured to outsole 26 and repels moisture to keep the inside of outer shell 22 dry when the mudguard portion of outer shell 22 drops below the snowline. Additionally, a wear guard 32 made of one or more layers of an abrasion-resistant material, such as a TPU, may be provided over a toe box area 34 (FIG. 2) of outer shell 22 to reduce wear caused by the snowboard bindings. Wear guard 32 may be disposed adjacent skin 30, under skin 30, or partially under skin 30 with portions of wear guard 32 protruding through skin 30 (FIG. 4) or exposed adjacent skin 30 over toe box 34 (FIG. 2).

[0025] Protective upper 28 also includes a water-resistant jacket 36 that extends upwardly from skin 30 across the lateral and rear portions of outer shell 22. Jacket 36 is a relatively thin, light membrane that is constructed from a durable and preferably abrasion resistant material to protect inner liner 24 from external contaminants and wear. Protective upper 28 may also include a throat covering 38 having a zipper closure 39. Throat covering 38 provides a water-resistant cover over inner liner 24 and the zipper closure 39 allows a rider to quickly open and close outer shell 22 without compromising the water-resistant properties of jacket 36 and throat covering 38.

[0026] Alternatively, protective upper 28 may include a more conventional lacing system for tightening outer shell 22 around inner liner 24. As shown in the embodiment of the present invention illustrated in FIG. 4, a sport boot 220 is provided that includes a lacing system 239. Lacing system 239 includes a double row of lace guides 241 that extend from toe box 234 upward toward the collar of jacket 236. A lower set of lace guides 243 include a hole through which a lace 245 is directed. In contrast, an upper set of lace guides 247 function as a lace hook and merely redirect lace 245 as it is strung between the rows. Lace guides 243, 247 are preferably made from a rigid material, such as plastic or metal; however, they may be made from flexible webbing such as nylon. Lace guides 243, 247 are attached to upper 228 in any suitable manner, such as by an adhesive, stitching and the like. A flexible outer tongue 249 extends from toe box 234 upward toward the collar of jacket 236 to protect a rider's foot from the pressure of lace 245. It will be appreciated by those skilled in the art that other tightening means may be employed to close outer shell 22, including, but not limited to, straps, buckles and the like.

[0027] Referring again to FIGS. 1 and 2, outer shell 22 is also provided with a rear support spine 44 to deflect pressure and reduce wear caused by the snowboard binding. Support spine 44 includes an external wear guard 46 and an internal semi-rigid support

member (not shown) that are disposed over and affixed to jacket 36. External wear guard 46 is made of a durable, abrasion resistant material, such as leather, and is preferably embossed to further enhance the abrasion resistance of the material. The internal support member is made of a formable material, such as thermoplastic elastomers (TPE); however, any suitable material that supports the spine of boot 20 and deflects pressure away from the rider's ankle will suffice.

[0028] An alternate embodiment of support spine 44 is shown attached to sport boot 220 illustrated in FIGS. 4 and 5. In this embodiment, sport boot 220 includes an internal support member (not shown) and an external wear guard 244, which form a support spine 244 that extends upwardly from outsole 226 to the collar of upper 228. External wear guard 246 is made of a durable, abrasion resistant material, such as leather, and preferably includes a plurality of longitudinally embossed ribs 247 that enhance the abrasion resistance of wear guard 246. The internal support member is made of a formable material, such as a TPU; however, any suitable material that supports the spine of boot 220 and deflects pressure away from the rider's ankle will suffice.

[0029] Another alternate embodiment of support spine 44 is shown in the embodiment of the present invention illustrated in FIGS. 6 and 7. In this embodiment, a sport boot 320 is provided that includes a support spine 344. Support spine 344 is a semi-rigid, curved plate 344 that is affixed over a jacket 336, such as by adhering or stitching support spine 334 to jacket 336. Support spine 344 is formed of a strong, durable material, such as TPU, that is both abrasion resistant and capable of deflecting pressure applied to the rear of boot 320. The outer rearward facing surface of support spine 344 may include a plurality of ridges 335 formed therein to further enhance the abrasion resistance of support spine 344.

[0030] Referring to FIGS. 1 and 8, inner liner 24 generally includes a cushioning midsole 48 and a flexible upper 50 affixed to midsole 48. Liner 24 is adapted to surround the foot and the lower part of a rider's leg and performs various functions, including, but not limited to, absorbing shock and thermally insulating the rider's foot.

[0031] Midsole 48 functions as the uppermost layer of the bottom of sport boot 20 with the purpose of providing stability and cushioning for a rider's foot. Unlike conventional sport boots that fix the midsole between an insole board and a shank in the outer shell, the present invention incorporates midsole 48 onto inner liner 24. Incorporating midsole 48 into inner liner 24 positions midsole 48 directly under a rider's foot to provide a level and

more stable platform for the foot. With midsole 48 built into inner liner 24, there is an improved relationship between the horizontal plane a rider's foot lies in and the horizontal plane of midsole 48. When attached in this manner, a rider's foot and midsole 48 more effectively remain in parallel planes, which improves the overall comfort and performance of sport boot 20.

[0032] Midsole 48 is made of a flexible cushioning material, such as Ethylene Vinyl Acetate (EVA), and extends upward to form an overlapping area that is affixed to upper 50 with a suitable adhesive and/or stitching. The thickness and cushioning properties of midsole 48 far surpass that of the thin, non-cushioning soles found in the removable liners of conventional sport boots. The bottom surface of midsole 48 preferably includes at least one traction surface 52, which is made from high friction rubber or TPE. Traction surface 52 is placed in position under the forefoot and heel areas of the midsole 48 to inhibit movement of inner liner 24 within outer shell 22 by using a rider's body weight to increase friction therebetween. Traction surface 52 can take virtually any shape, including, but not limited to, the wing shaped traction pod 52 illustrated in FIG. 1 and the thin, longitudinally extending traction strips 252 illustrated in FIG. 10.

[0033] Midsole 48 also includes a support shank 54, which is designed to maintain curvature underfoot. Unlike traditional sport boots that place the shank on the outsole, the shank in the present invention is relocated to midsole 48, closer to a rider's foot. When attached to midsole 48, shank 54 is not distorted by the external environment or the relative position of the outsole. Support shank 54 matches the natural curve of a rider's foot to improve foot support and reduce foot fatigue.

[0034] Referring to FIG. 10, an alternate embodiment of midsole 48 is shown. In this embodiment, a midsole 248 is provided that includes at least one shock absorbing component 255, which may be positioned in either the heel or forefoot areas of midsole 248, or both. An exemplary shock absorbing component is disclosed in U.S. patent number 6,029,962, which describes a shock absorbing component having at least one pair of inwardly directed hemispherical domes that cooperatively engage one another to absorb shock and provide cushioning when the component is compressed. The close proximity of midsole 248 and shock absorbing component 255 to the rider's foot provides improved shock attenuation. Positioning shock absorbing component closer 255 to the rider's foot also reduces rebound and provides greater impact absorption.

[0035] Referring again to FIG. 8, upper 50 includes an outer layer 56 made from fabrics or textiles, leather, suede, polymers, composites or a combination of some or all of these materials. Outer layer 56 is preferably backed by an inner cushioning and thermal layer (not shown) to provide comfort and insulation to a rider's foot during use. Outer layer 56 defines a liner throat line 58 adjacent to which a tongue 60 is disposed. Tongue 60 extends upwardly from a toe box area 62 of inner liner 24 to a single opening 64 within which a rider's foot is inserted.

[0036] Referring to FIG. 9, inner liner 24 also includes a tongue stiffener 66 that is secured to the outwardly facing side of tongue 60. Tongue stiffener 66 is made from a relatively stiff, yet bendable material, such as a thermoplastic or a TPU. Tongue stiffener 66 is a generally elongated member that extends from the upper portion of tongue 60 toward toe box 62. Tongue stiffener 66 is slightly tapered about its midsection to facilitate bending of tongue 60. However, tongue stiffener 66 is provided with a plurality of longitudinally extending ribs 68 that project outward from tongue stiffener 66 to increase its rigidity. Tongue stiffener 66 regulates plantar flexion, maintains flexural durability of sport boot 20 and deflects binding strap pressure away from the top of a rider's foot during use. Tongue stiffener 66 is preferably edge sewn to tongue 60; however, any suitable adhesive or glue could be used to adhere tongue stiffener 66 to tongue 60.

[0037] As shown in the alternate embodiments of inner liner 24, which are illustrated in FIGS. 11 and 12, tongue stiffeners 266 and 366 may optionally include a post 269 and 369, respectively, which extend outwardly therefrom. In boots that include an outer shell with a flexible outer tongue, such as boot 220 shown in FIGS. 4 and 5, post 269, 369 extends through a hole in outer tongue 249 to inhibit lateral movement of outer tongue 249 relative to the inner tongue located on the inner liner during use.

[0038] Referring again to FIG. 8, a means for tightening inner liner 24 on a rider's foot is arranged on the surface of outer layer 56 adjacent tongue 60. In a preferred embodiment, the tightening means is a lacing system having a plurality of spaced apart lace loops 70 that extend along throat line 58 of outer layer 56. Lace loops 70 are formed from the terminal end of a corresponding lacing strap 72 that extends across a portion of outer layer 56 or are fixed directly to outer layer 56 proximate throat line 58. Lacing straps 72, which are made from fabrics, textiles, leather, suede, polymers or composites, provide enhanced foot support and increase heel hold of a rider's foot within inner liner 24. Lacing straps 72 may

function as a single structure as shown in FIG. 8, or may extend from a panel that includes multiple lacing straps as shown in FIGS. 11 and 12. The lacing system in general provides good closure of inner liner 24 around a rider's foot, exacting fit, and increasing heel hold. It will be appreciated by those skilled in the art that other tightening means may be employed to close inner liner 24, including, but not limited to, straps, buckles, zippers and the like.

[0039] Lacing straps 72 cooperate with other panels that overlay outer layer 56 to form an exoskeleton for inner liner 24. Referring particularly to FIG. 8, the exoskeleton includes at least one flex stabilizer 74 that is located on the lateral and one medial portions of upper 50 over outer layer 56. Flex stabilizer 74 and the other panels that overlay outer layer 56 regulate movement and flexibility of inner liner 24 and provide support for a rider's foot. It will be appreciated that the shape and position of the panels overlaying outer layer 56 are not limited to those shown in FIGS. 8, 11 and 12, and may include other shapes and sizes that regulate flex and support inner liner 24 as needed.

[0040] Stabilizer 74 is made from a stiff, yet bendable material, such as composites, thermoplastics and TPE's, and includes a base 76 and at least one finger-like stabilizing element 78 that extends from base 76 along upper 50. In the embodiment shown in FIG. 8, stabilizer 74 begins at the bottom of upper 50 with a tapered edge (not shown) that is located along the net line of the sole of a rider's foot, and extends forward toward toe box 62 and backward toward the heel area of inner liner 24. Base 76, which is the thickest portion of stabilizer 74, is designed to stiffen the area around the sides of a rider's foot and the area proximate the rider's ankle. Finger-like stabilizing elements 78 are thinner in dimension than base 76 and exhibit a cross-section that is ribbed, as shown in FIG. 13, having a center portion that is thicker than the edges. The finger-like stabilizing elements 78 are positioned along upper 50 in such a manner as to resist inversion and eversion of the ankle, but are curved in such a manner as to regulate flexion in the plantar and dorsiflexion planes. Stabilizer 74 is affixed to upper 50 over outer layer 56 in any suitable manner, such as by an adhesive, stitching and the like.

[0041] An alternate embodiment of stabilizer 74 is shown FIG. 11. In this embodiment, an inner liner 224 is provided that includes a stabilizer 274 that is positioned over outer layer 256 between the lower and upper lacing straps 272. Stabilizer 274 includes at least one finger-like stabilizing element 278 that extends upwardly from a base

276 along the sides of upper 250. Unlike stabilizer elements 78 described above, stabilizer elements 278 are relative flat and exhibit a substantially uniform cross section. However, as described above, finger-like stabilizing elements 278 are arranged along upper 250 in such a manner as to resist inversion and eversion of a rider's ankle. In contrast to stabilizer 74, stabilizer 274 does not extend forward toward the toe box area 262 of inner liner 224.

[0042] Another alternate embodiment of stabilizer 74 is shown FIG. 12. In this embodiment, an inner liner 324 is provided that includes a stabilizer 374 that is positioned over outer layer 356 around the Achilles area of a rider's foot. Stabilizer 374 includes at least one finger-like stabilizing element 378 that extends diagonally from a base 376 of stabilizer 374 along the sides of upper 356. Like stabilizer elements 278 described above, stabilizer elements 378 are relative flat and exhibit a substantially uniform cross section. Additionally, as described above, finger-like stabilizing elements 378 are arranged along upper 356 in such a manner as to resist inversion and eversion of a rider's ankle. However, in contrast to stabilizer 74, stabilizer 374 includes an aperture 375 that allows base 376 of stabilizer 374 to bend, but also regulate flexion in the plantar and dorsiflexion planes.

[0043] Referring to FIG. 14, another embodiment of the present invention is shown. In this embodiment, an inner liner 424 is provided that is substantially similar to any one of inner liners 24, 224 and 324. Inner liner 424 includes a flexible heel hold member 481 having a heel portion 483 and an upper portion 485. Heel portion 483 includes a left side heel portion 487 and a right side heel portion (not shown) that is substantially similar to the left side heel portion. The left side heel portion 287 is connected to the right side heel portion along the rear portion of heel hold member 481. Upper portion 485 extends upwardly from heel portion 483 along the rear portion of heel hold member 481 to an attachment loop 488. Heel hold member 481 may be made of any flexible, yet durable materials, including, but not limited to, foam rubber, neoprene, fabric or a combination of some or all of these materials.

[0044] As illustrated in FIG. 14, the left and right side heel portions include an ankle hole 489 around which is positioned a half moon-shaped ankle pad 491. A bottom portion of the left and right side heel portions are attached to inner liner 424 proximate midsole 448. Heel hold member 481 also includes a reinforced edge 493 having attached thereto at least one lace loop 495 that receives a portion of the inner liner lace as it is threaded through the lace loops (not shown) of inner liner 424. As inner liner 424 is secured onto

the foot of a rider, the inner liner lace draws the rider's foot tightly into heel hold member 481. Once inner liner 424 is properly secured onto the rider's foot, heel hold member 481 inhibits movement of the rider's foot within inner liner 424 giving greater control of the boot and providing muscular-skeletal support.

[0045] Although certain preferred embodiments of the present invention have been described, the invention is not limited to the illustrations described and shown herein, which are deemed to be merely illustrative of the best modes of carrying out the invention. A person of ordinary skill in the art will realize that certain modifications and variations will come within the teachings of this invention and that such variations and modifications are within its spirit and the scope as defined by the claims.

CLAIMS

What is claimed is:

1. A sport boot comprising:
an outer shell and an inner liner received within the outer shell;
the outer shell including an outsole and a protective upper affixed to the outsole;
and
the inner liner including a midsole and a flexible upper affixed to the midsole.
2. The sport boot of claim 1, wherein an outer surface of the midsole includes at least one traction surface to inhibit movement of the inner liner within the outer shell.
3. The sport boot of claim 1, wherein the inner liner further includes a support shank secured to the midsole.
4. The sport boot of claim 1, wherein the inner liner further includes at least one stabilizer having a base and at least one finger-like stabilizing element that extends outwardly from the base along the flexible upper.
5. The sport boot of claim 4, wherein the base extends upwardly from the midsole along the side of the inner liner.
6. The sport boot of claim 5, wherein the finger-like stabilizing element extends vertically upward from the base and is secured to the flexible upper.
7. The sport boot of claim 4, wherein the base is positioned around the Achilles area of the inner liner.
8. The sport boot of claim 4, wherein the stabilizer resists inversion and eversion.
9. The sport boot of claim 4, wherein the stabilizer regulates flexion in the plantar and dorsiflexion plane.
10. The sport boot of claim 1, wherein the protective upper includes a water-resistant skin that extends upward from the outsole along a mudguard portion of the outer shell.

11. The sport boot of claim 1, wherein a tongue is affixed to the inner liner, the tongue including a tongue stiffener that regulates plantar flexion of the sport boot.
12. The sport boot of claim 1, wherein the inner liner includes a lacing system arranged on the flexible upper.
13. The sport boot of claim 1, wherein the outer shell includes a water-resistant throat covering having a zipper closure.
14. The sport boot of claim 1, wherein the midsole includes a shock absorbing component.
15. The sport boot of claim 14, wherein the shock absorbing component includes at least one pair of inwardly directed hemispherical domes that cooperatively engage one another to absorb shock and provide cushioning.
16. The sport boot of claim 1, wherein the inner liner is removably received with the outer shell.
17. The sport boot of claim 1, wherein the inner liner includes a heel hold member.
18. A sport boot comprising:
 - an outer shell and an inner liner received within the outer shell;
 - the outer shell including an outsole and a protective upper affixed to the outsole;
 - and
 - the inner liner including a flexible upper and a heel hold member received within the flexible upper.
19. A sport boot comprising:
 - an outer shell and an inner liner received within the outer shell;
 - the outer shell including an outsole and a protective upper affixed to the outsole, the protective upper including a water-resistant jacket, a water-resistant skin that extends upward from the outsole along a portion of an outer surface of the jacket and a water-resistant vamp covering having a zipper closure; and

the inner liner including a cushioning midsole and a flexible upper affixed to the midsole, the flexible upper including at least one stabilizer having a base and at least one finger-like stabilizing element that extends along a portion of the flexible upper to regulate flexion of the sport boot.

20. A sport boot comprising:

an outer shell and an inner liner received within the outer shell;

the outer shell including an outsole and a protective upper affixed to the outsole;

and

the inner liner comprising a cushioning midsole and a flexible upper affixed to the midsole, the flexible upper including at least one stabilizer that extends along a portion of the inner liner to regulate flexion of the sport boot, the midsole including a support shank to provide foot support and reduce foot fatigue.

21. A sport boot comprising:

an outer shell and an inner liner removeably received within the outer shell;

the outer shell including an outsole and a protective upper affixed to the outsole;

and

the inner liner including a cushioning midsole and a flexible upper affixed to the midsole, the inner liner further including at least one stabilizer that extends along a portion of the flexible upper to regulate flexion of the sport boot, a support shank secured to the midsole to provide foot support and reduce foot fatigue, and a tongue affixed to the flexible upper, the tongue including a tongue stiffener that further regulates flexion of the sport boot.

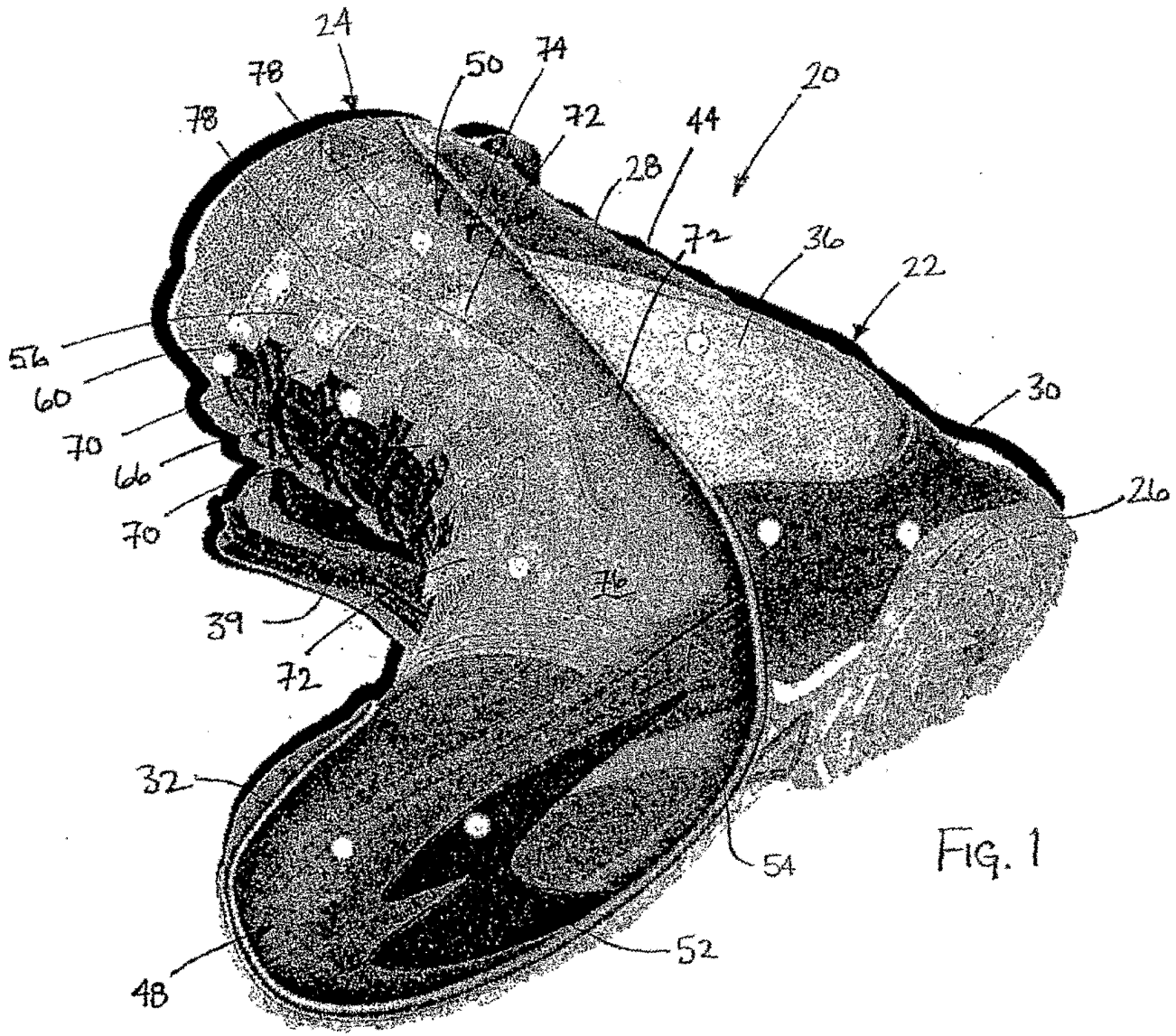
22. A sport boot comprising:

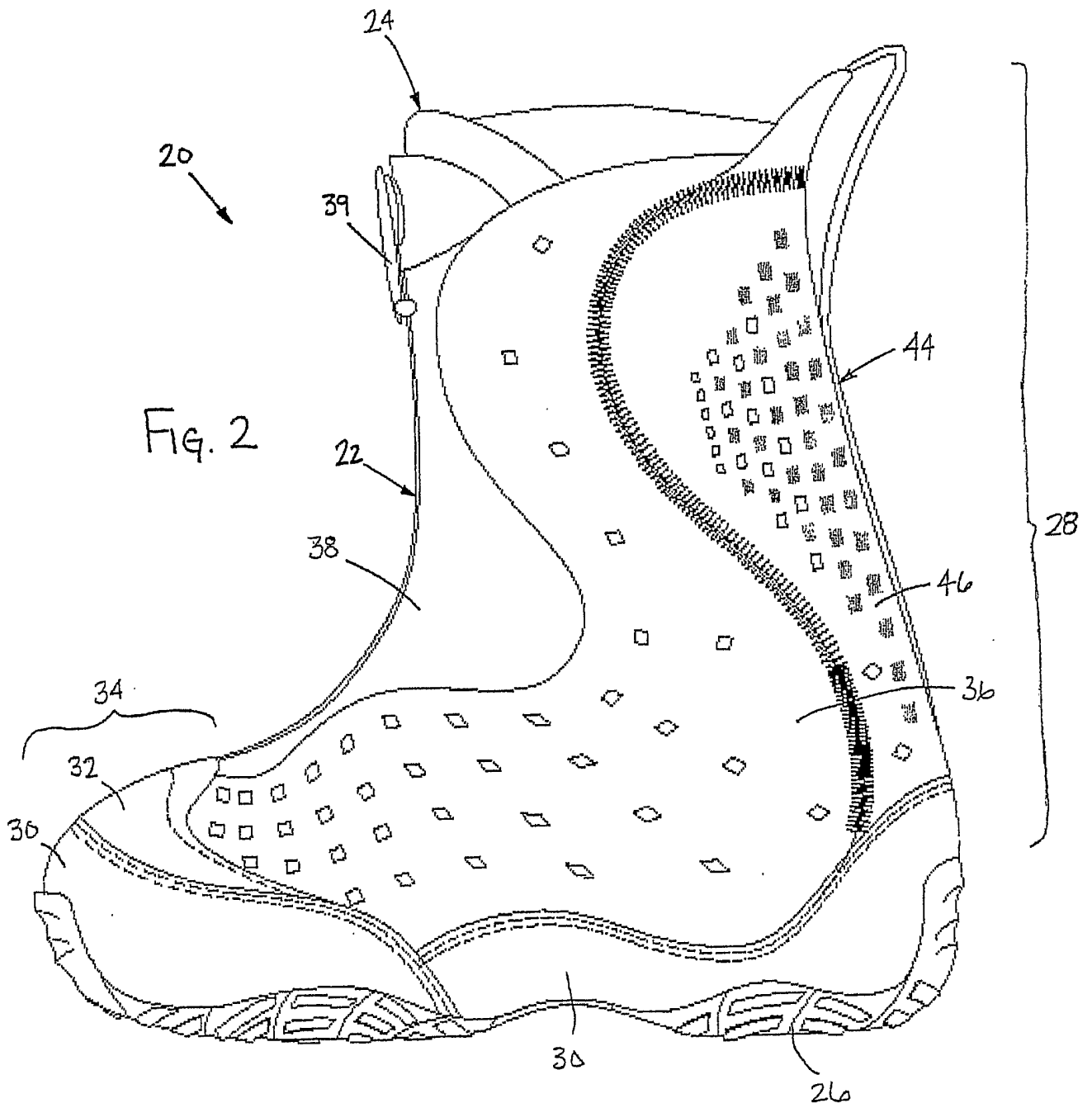
an outer shell and an inner liner removeably received within the outer shell;

the outer shell including an outsole and a protective upper affixed to the outsole, the protective upper including a water-resistant jacket, a water-resistant skin that extends upward from the outsole along a portion of an outer surface of the jacket and a water-resistant vamp covering having a zipper closure; and

the inner liner including a cushioning midsole and a flexible upper affixed to the midsole, the inner liner further including at least one stabilizer having at least one finger-like stabilizing element that resists inversion and eversion of the sport boot and regulates flexion of the sport boot in the plantar and dorsiflexion plane, a support shank secured to the midsole to provide foot support and reduce foot fatigue, at least one traction surface on an outer surface of the midsole to inhibit movement of the inner liner relative to the outer shell, and a tongue affixed to the flexible upper that includes a tongue stiffener for further regulating plantar flexion of the sport boot.

23. The sport boot of claim 22, wherein at least one of the water-resistant jacket and water-resistant skin are generally water-proof.





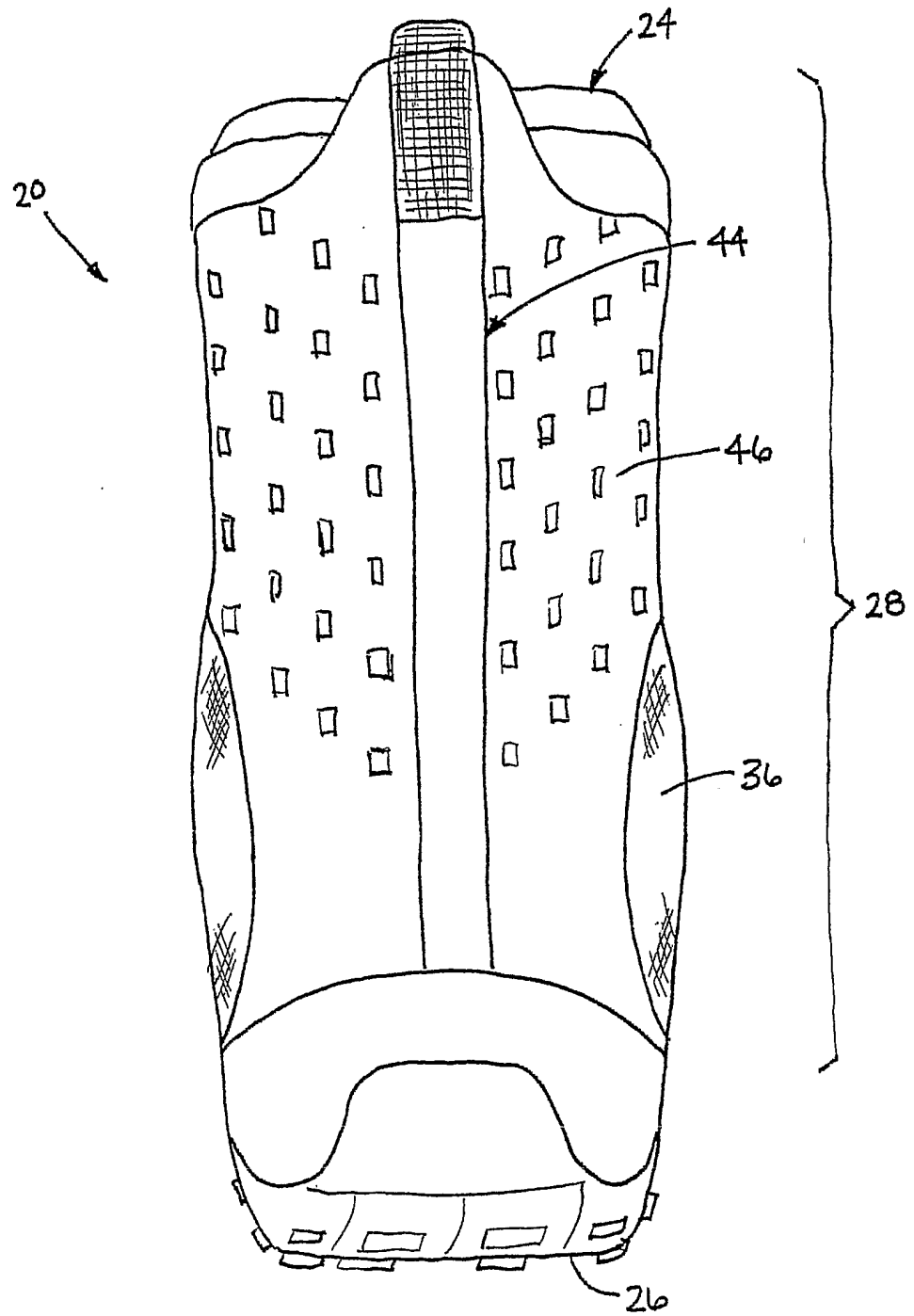


FIG. 3

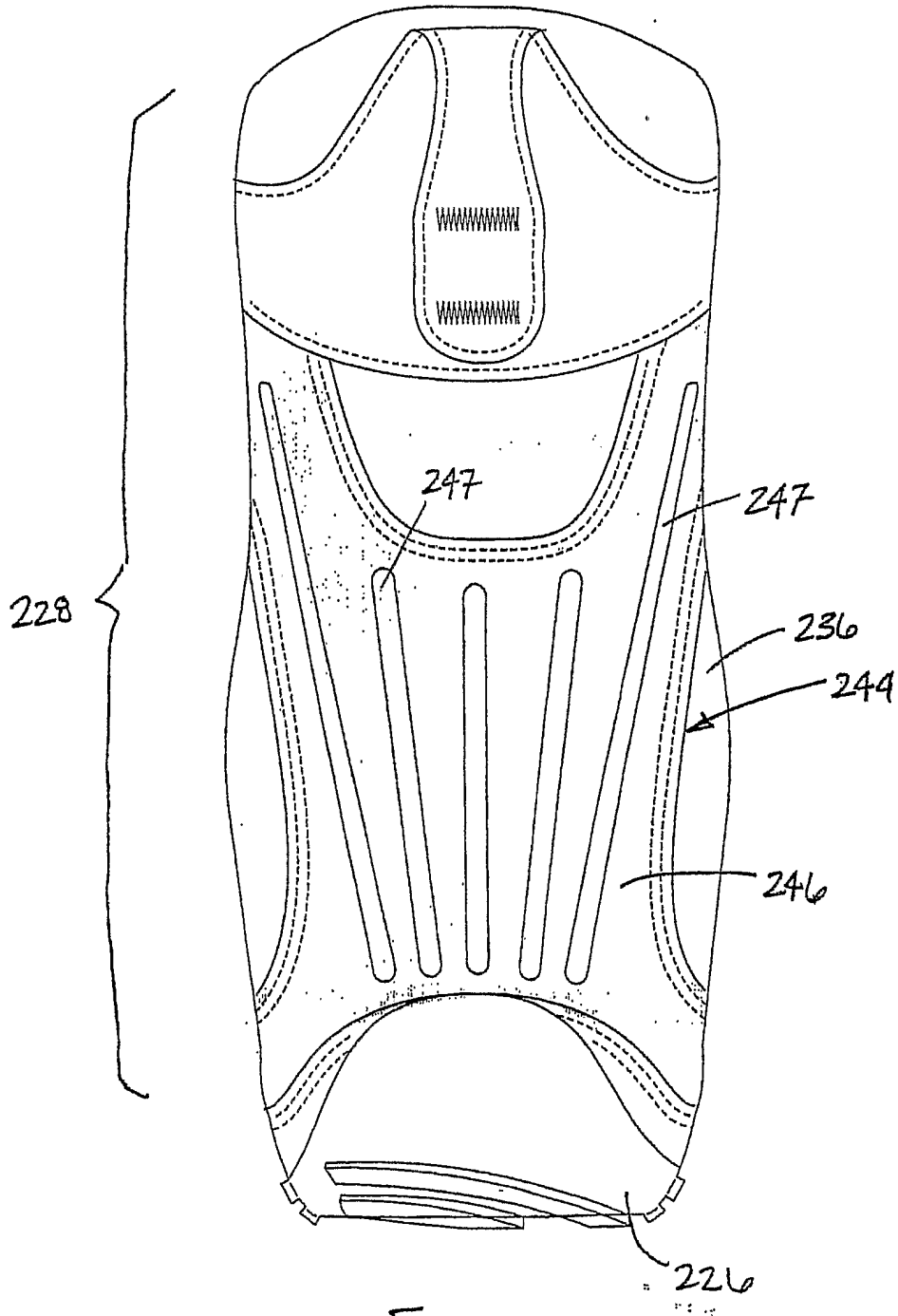


FIG. 5

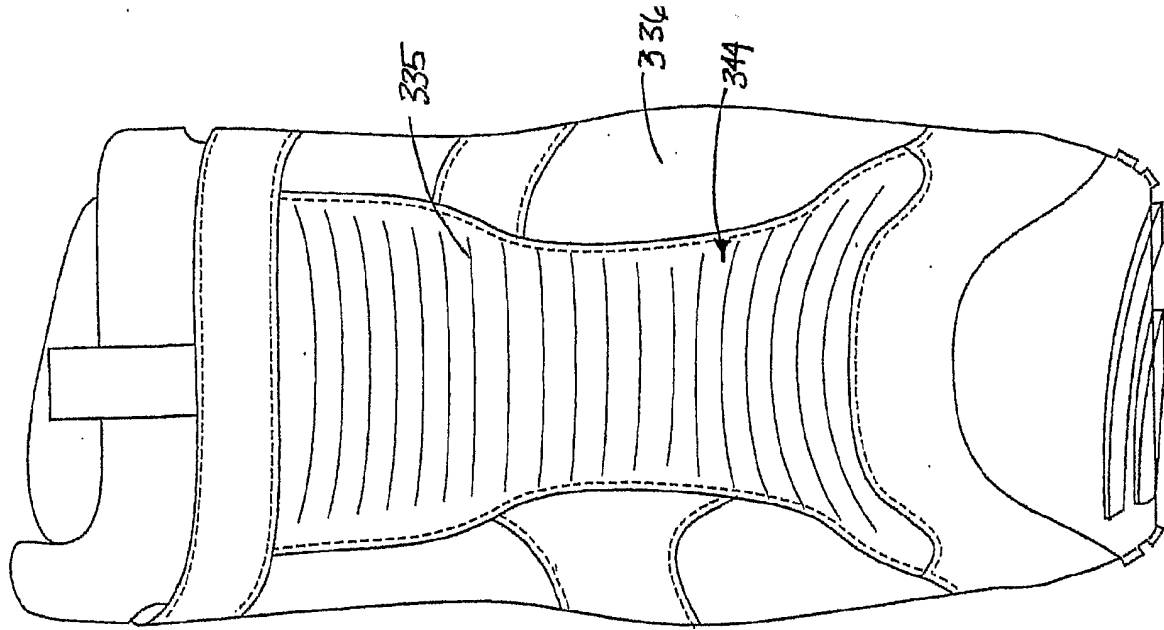


FIG. 7

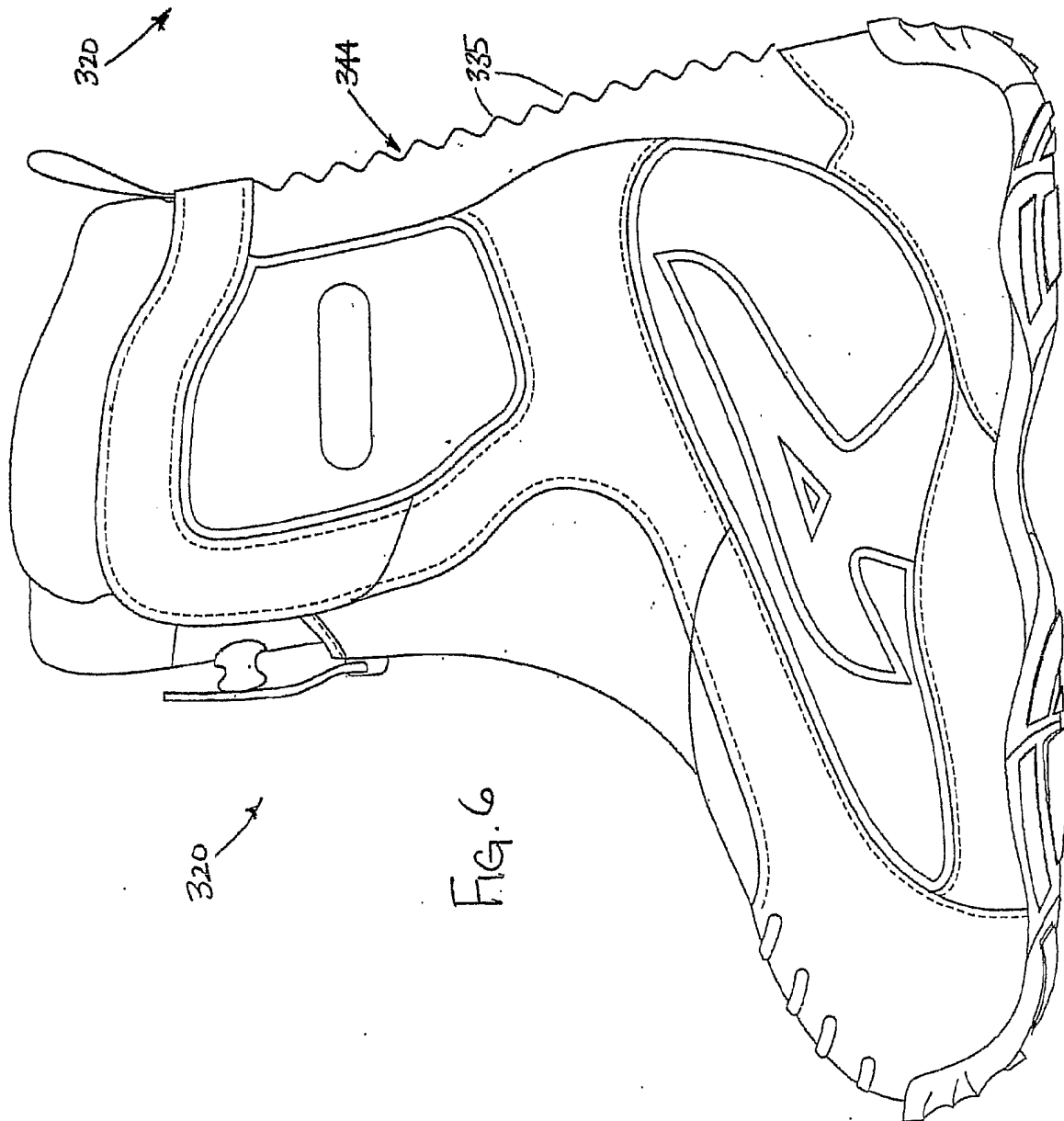
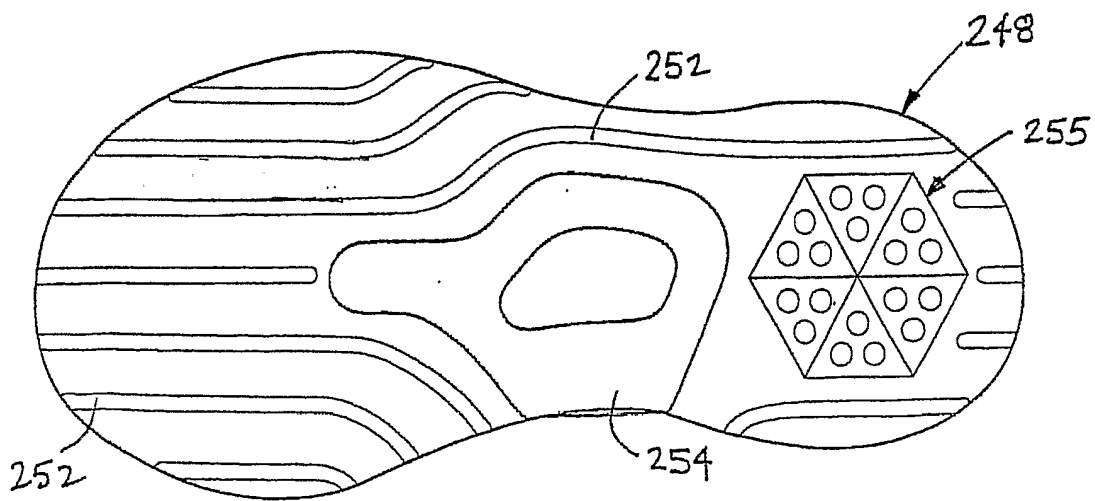
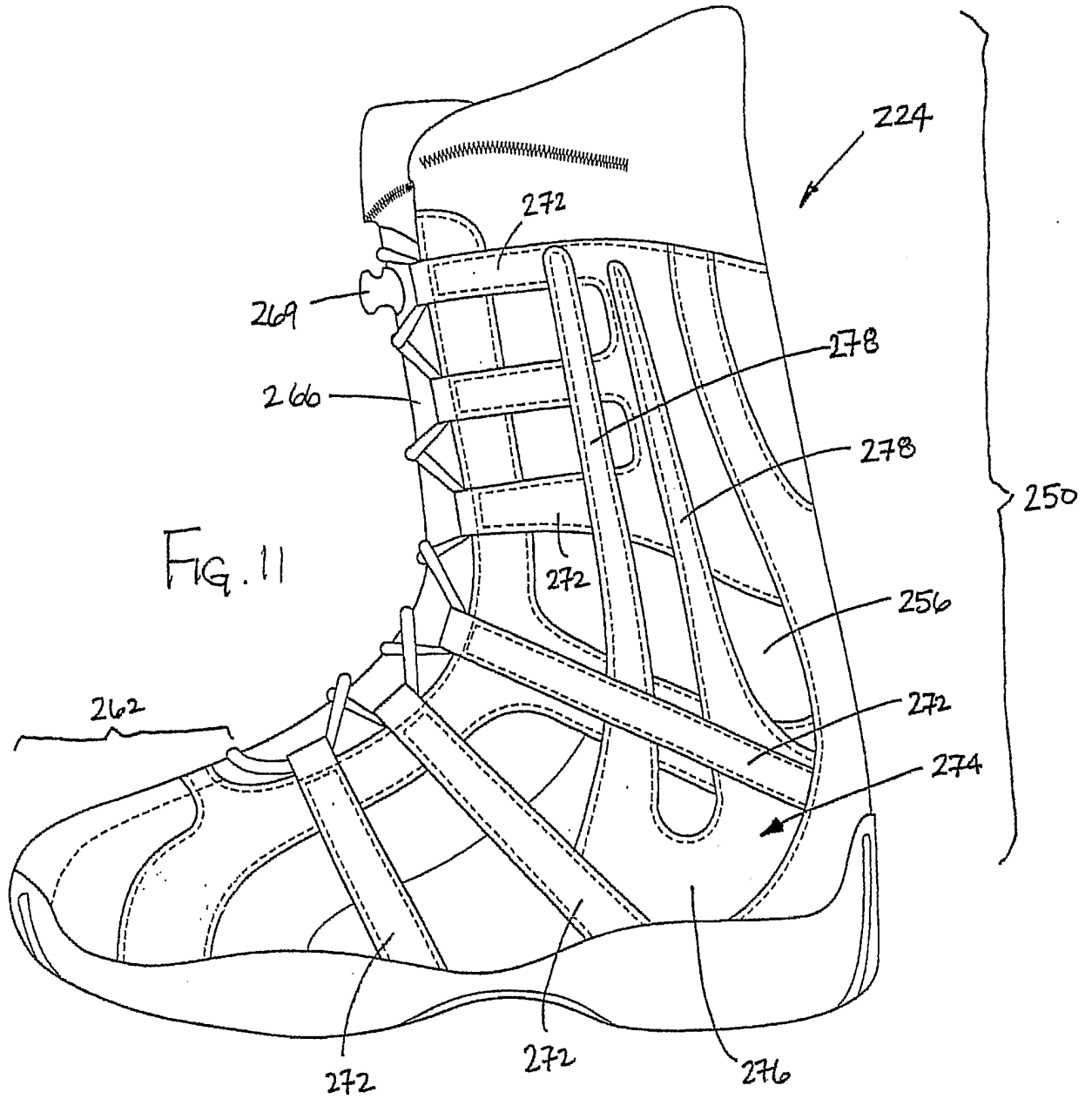


FIG. 6



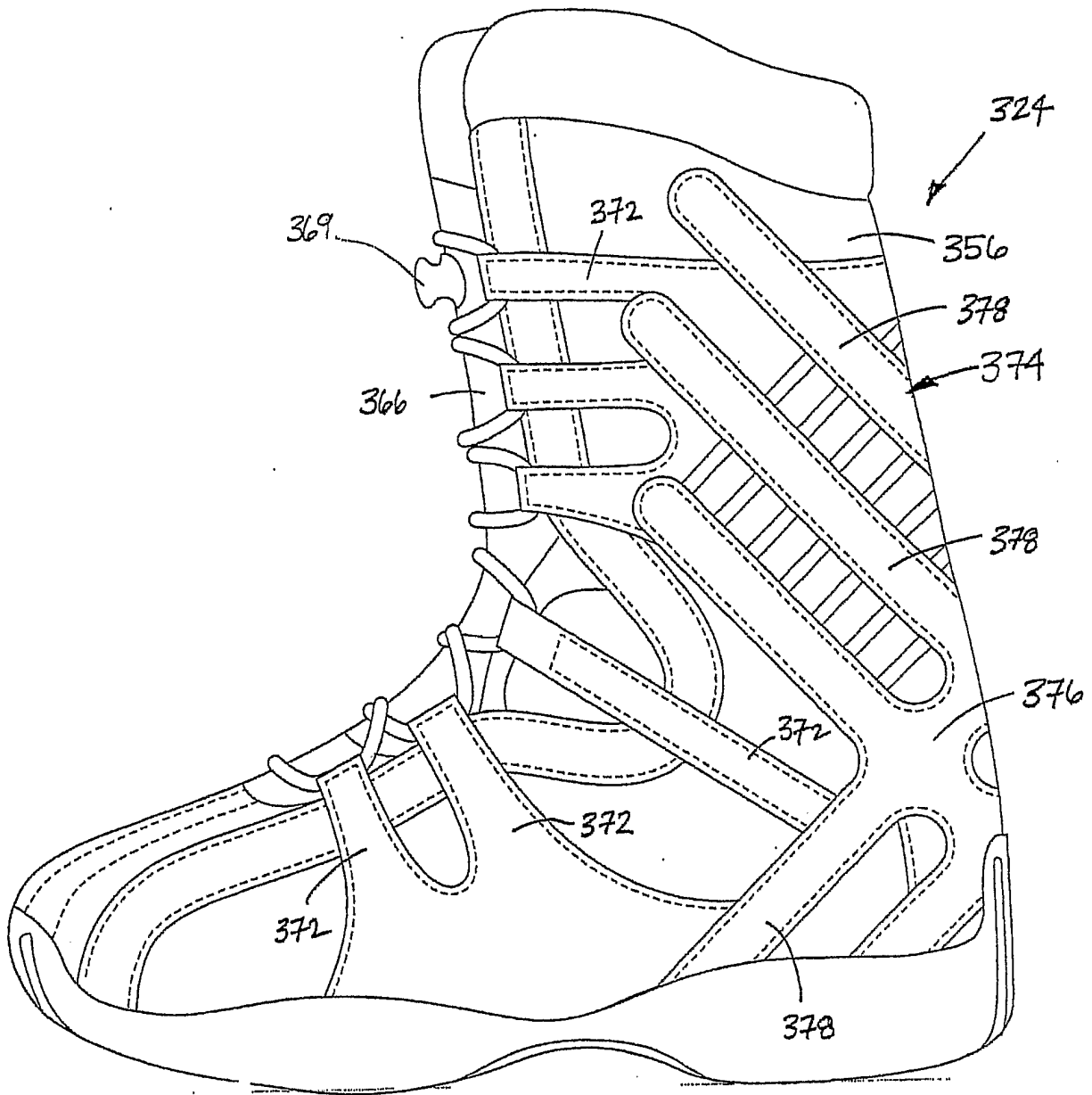


Fig. 12

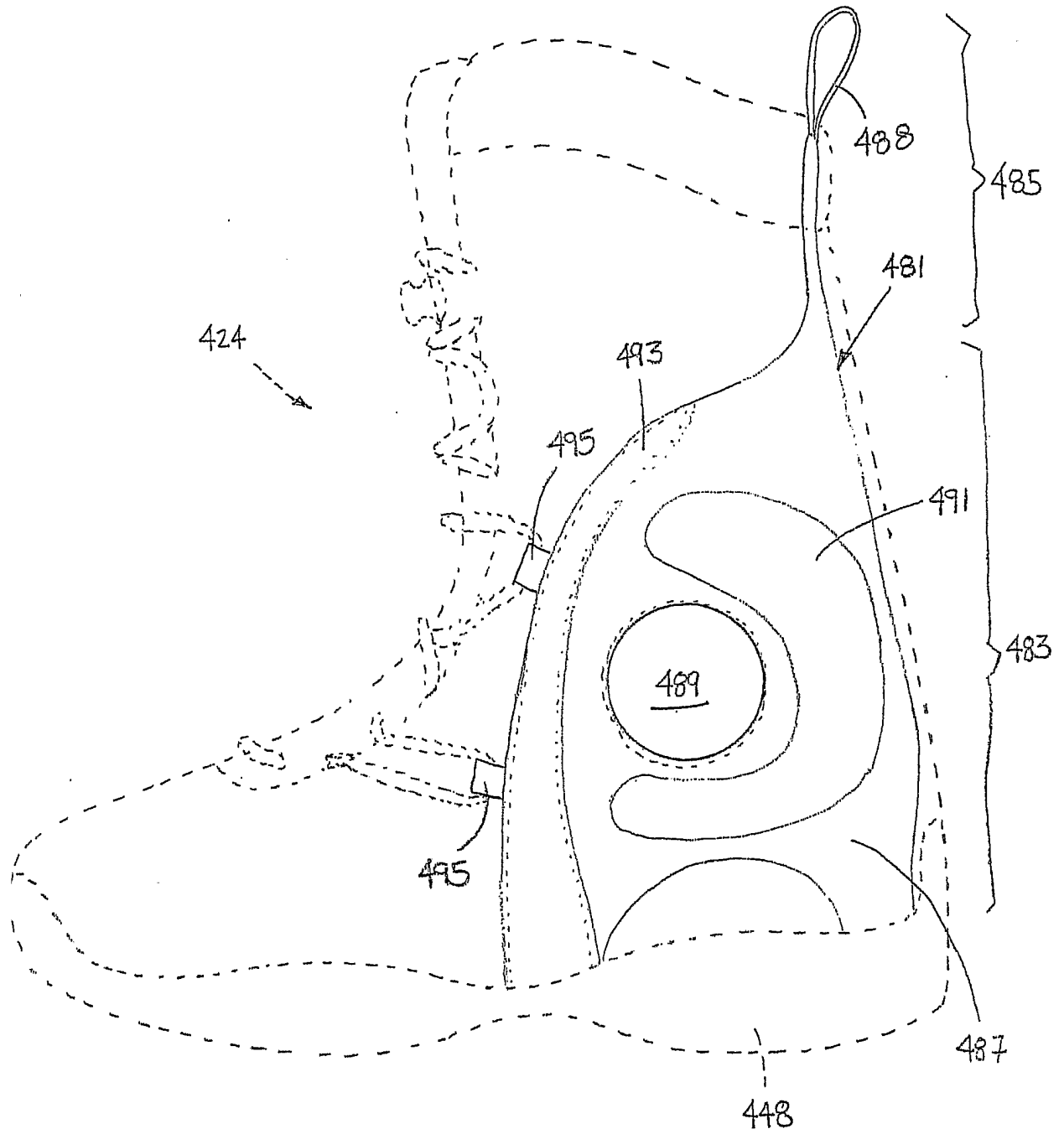


FIG. 14