FOOTWEAR FIT SYSTEM

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Appl. No.: 10/135,672
Filed: Apr. 30, 2002

Related U.S. Application Data
Provisional application No. 60/287,628, filed on Apr. 30, 2001.

Publication Classification
Int. Cl. A43C 11/00
U.S. Cl. 36/50.1, 36/58.5

ABSTRACT

An article of footwear has a sole and a footwear fit system. The sole has a first side and a second side. The footwear fit system has a pair of fitting members that include a first base portion and a second base portion. The first base portion extends upwardly from the first side to support a first foot-bearing portion that extends laterally from the first base portion to a first terminus. The first base portion and the first foot-bearing portion together form at least one resilient elongate finger that independently biases the first foot-bearing portion towards the sole. The second base portion extends upwardly from the second side to support a second foot-bearing portion that extends laterally from the second base portion to a second terminus. The second base portion and the second foot-bearing portion together form at least one resilient elongate finger that independently biases the second foot-bearing portion towards the sole. The first terminus is positioned adjacent to the second terminus for operably fastening a foot of a user on the sole.
Fig. 11A: Clip-on or glue-on pad

Fig. 11B: Dual density molding

Fig. 11C: Sleeve pad

Fig. 11D: All hard with flex slots

Fig. 11E: Circular - all hard or hard with soft outer sleeve
FOOTWEAR FIT SYSTEM
CROSS-REFERENCE TO RELATED APPLICATIONS
[0001] This application for a utility patent claims the benefit of U.S. Provisional Application No. 60/287,628, filed Apr. 30, 2001, hereby incorporated by reference in its entirety.

STATEMENT REGARDING FEDERA LY SPONSORED RESEARCH
[0002] Not Applicable.

BACKGROUND OF THE INVENTION
[0003] 1. Field of the Invention
[0004] The present invention relates to footwear, and, more particularly, to a closure system which allows an article of footwear to be conveniently and adaptively attached to the foot.
[0005] 2. Description of Related Art
[0006] Shoe and boot designs, driven by various combinations of fashion and function, have been interior last shapes have allowed function to reflect targeted uses.
[0007] Since an article of footwear must integrate with the three-dimensional shape and surface features of the human foot, a variety of closure systems have been devised. These include laces, straps, elastic panels, buckles, etc. In concept, these systems are designed to allow the wearer to close or tighten the shoe’s upper around the foot and secure the article in place for walking, running of whatever other activity is desired. Some footwear designs have made use of relatively rigid panels or component members such that foot and ankle support is increased when the closure system is adjusted for a given foot shape. These “hard” panels are normally shaped and positioned to allow the foot to bend and to allow the foot’s external shape to be controlled. Thus, the rigid panels, by themselves, are made functional only by the positioning and security that laces, stretchable elements or other closure systems provide.

SUMMARY OF THE INVENTION
[0008] Disclosed is a footwear closure and fit system in which one or more firm but flexible fitting members, such as fit panels, are integrated into the construction of an article of footwear, such as a shoe or boot. These panels are configured so as to hold the article of footwear to the foot without the use of laces, straps or other attachment devices. The panels are designed and positioned such that in a default or relaxed state, they define an interior space somewhat smaller in volume than the user’s foot. To enter the shoe or boot, the fitting panels are retracted, either manually or simply by the motion of the foot entering the interior space. As the foot becomes located in it’s proper position within the shoe or boot, the flexural force of the panels exerts a closing force against the foot, with an equilibrium attained that allows the shoe or boot to effectively become one with the foot. Advantageously, the fit panels do not require manual or mechanical tightening by the user to effect their closure function, although the closure and fit system may be supplemented with manual attachments, such as, for example, laces or clips.
[0009] The flexible panels may either bear directly onto the foot surface, or be enclosed within the body of the shoe or boot’s upper thus activating an intermediate layer for the purpose or positioning the foot as desired. It is also foreseen that primary flexural panels could bear upon other attached but articulating secondary panels, whereby the flexural force of the primary panels holds the articulating secondary panels against the foot. The articulating secondary panels then may more freely adapt to the contours of the individual foot. The panels, in their variety of arrangements, may be incorporated into any type of footwear, including shoes, boots, and sandals.
[0010] Other features and advantages of the present invention should be apparent from the following description of the preferred embodiment, which illustrates, by way of example, the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWING
[0011] These and other features of the invention will now be described with reference to the drawings summarized below. These drawings and the associated description are provided to illustrate preferred embodiments of the invention, not to limit the scope of the invention.
[0012] FIG. 1A is an exploded perspective view of a first embodiment of a footwear member that incorporates a fit system described herein.
[0013] FIG. 1B is a perspective view thereof.
[0014] FIG. 2A is a left perspective view of a second embodiment thereof.
[0015] FIG. 2B is a right perspective view thereof.
[0016] FIG. 3A is a side elevational view of a third embodiment thereof.
[0017] FIG. 3B is a sectional view taken along lines 33-3B in FIG. 3A.
[0018] FIG. 4 is a side elevational view of a fourth embodiment thereof.
[0019] FIG. 5 is a sectional view taken along lines 5-5 in FIG. 4.
[0020] FIG. 6 is a side elevational view of a fifth embodiment thereof.
[0021] FIG. 7 is a sectional view taken along lines 7-7 in FIG. 6.
[0022] FIG. 8 is a view of a boot-type footwear member that incorporates the fit system.
[0023] FIG. 9 is a perspective view of a sixth embodiment of the fit system that includes an articulating plate.
[0024] FIG. 10 is a perspective view of a seventh embodiment of the fit system in a casual shoe, the fit system further including a tongue element.
[0025] FIG. 11A is a cross-sectional view of a first embodiment of a resilient elongate finger of the fit system.
FIG. 11B is a cross-sectional view of a second embodiment thereof.

FIG. 11C is a cross-sectional view of a third embodiment thereof.

FIG. 11D is a cross-sectional view of a fourth embodiment thereof.

FIG. 11E is a cross-sectional view of a fifth embodiment thereof.

FIG. 12 is a perspective view of a first embodiment of an elongate heel support.

FIG. 13 is a perspective view of a second embodiment thereof.

FIG. 14 is a perspective view of a third embodiment thereof.

FIG. 15 is a perspective view of a fourth embodiment thereof.

DETAILED DESCRIPTION OF THE INVENTION

Throughout this description, the preferred embodiment and examples shown should be considered as exemplars, rather than limitations on the apparatus and methods of the present invention.

As shown in the above-described figures, the invention is footwear 5 that includes a footwear member 10 and a footwear fit system 28 that is operably attached to a footwear member 10. The footwear member 10 includes a sole 12 that includes a top sole surface 14, a bottom sole surface 16, a first side 18, a second side 20, a rear side 22, and a front side 24. The footwear member 10 can also include various additional elements, such as an upper 25 and an inner lining 27, as described in greater detail below. The footwear fit system 28 can include one or more fitting members 30, a heel portion 70, a tongue element 70, and/or a front fitting member 95. The one or more fitting members 30 and/or the other elements described function, in combination, to removably attach the sole 12 to a foot 26 of a user, and are described in greater detail below.

Various embodiments of this invention are described, in turn, below. Before describing these particular embodiments, however, we will first discuss the general structure and function of the invention.

In the embodiments shown in FIGS. 1A-7 and 9, the footwear member 10 is a form of sandal. In the embodiment shown in FIG. 8, the footwear member 10 is a boot. As shown in FIG. 10, the footwear member 10 can also be a casual shoe. It is appreciated that the footwear fit system 28 could be incorporated into any type of footwear member 10, including sports shoes, dress shoes, women's shoes, loafers, or other form of shoes, boots, or other footwear. The scope of the claimed invention should be construed to include all manner of footwear, and should not be limited to the specific embodiments described herein.

As shown in FIG. 1B, the footwear fit system 28 is configured to fit snugly around the foot 26 and thereby secure the foot 26 on the top sole surface 14 and within the footwear member 10 (if the footwear member 10 includes an upper 25). As shown in FIGS. 1A-15, the footwear fit system 28 includes one or more fitting members 30, described in greater detail below, that extend upwardly from the sole 12. The fitting members 30 and the sole 12 collectively define a volume 32 that is sized to receive the foot 26. The fitting members 30 preferably also define an entryway 34 that opens into the volume 32. The sole 12 is positioned beneath the foot 26 when it positioned within the volume 32.

The fitting members 30 extend upwardly from the outer periphery of the sole 12 and are disposed around the foot 26 when the foot 26 is located within the volume 32. As shown in the cross-sectional view of FIGS. 3B, 5, 7, and 11A-11E, the fitting members 30 preferably have a thin cross-sectional shape and are preferably contoured such that an interior surface of the fitting members 30 conform to the outer contour of the foot 26 when in use. The fitting members 30 may include a padded layer 36 for added comfort, or may be unpadded, and may also be of varying widths and thicknesses so as to define closure characteristics and areas of high versus low pressure against the foot 26.

With reference still to FIGS. 3B and 5, the fitting members 30 are preferably biased toward a default position (shown in solid lines) such that in an undisturbed state, the volume 32 is smaller than the volume of the foot 26. In this manner, the fitting members 30 preferably exert pressure against the foot 26 when the foot 26 is disposed within the volume 32 and thereby secure the foot 26 to the sole 12. The bias in the fitting members 30 toward the default position is accomplished by fabricating the fitting members using materials with specific characteristics and to a specific shape. The material preferably has a flexural modulus that allows the member to be elastically deformed outward as the foot 26 is inserted into the volume 32, while being able to elastically return toward the default position once the foot 26 is in place within the volume 32. The material will preferably have little or no hysteresis and will also not be subject to changes in it's flexural modulus (weakening or permanently being deformed) over time. The shape of the members is also preferably designed to exert more or less continuous pressure against the surface of the foot 26. The attachment point for each member is preferably of a rigid nature, connected either to a substantial portion of the shoe's sole 12 or continuing under or through the shoe to the fitting member(s) on the opposite side. This firm attachment provides that substantially all of the elastic travel inherent in the member's design is achieved through the flexural deformation of the material itself, rather than through the use of a mechanical hinge or other mechanism.

The fitting members 30 are preferably configured to allow movement to an extended position (shown in phantom lines) such that when in the extended position, the volume 32 increases in size. The size of the entryway 34 also increases when the fitting members 30 are moved to the extended position. The entryway 34 preferably increases to a size such that the foot 26 may be inserted into the volume 32 by sliding the foot 26 at least partially through the entryway 34.

It will be appreciated that the particular size, shape and location of each of the fitting members 30 could be varied to change the size and shape of the volume 32. The fitting members 30 preferably have a shape such that the volume 32 approximates the shape of the foot 26. The fitting members 30 are preferably rigid such that the fitting memb-
bers maintain their general shape and do not plastically deform when pressure is applied thereto. However, the fitting members 30 are also flexible so that the fitting members 30 conform to the shape of the foot 26 when the fitting members 30 bear against the foot 26. The outline shape of the fitting members 30 is not necessarily elastic or stretchable. However, the range of movement of the fitting members 30 between the default and the extended position is preferably configured such that the fitting members 30 automatically recover to the default position after being moved away from the default position. The position of the fitting members, as they define the default position, may additionally be adjustable by either the manufacturer, retailer or user.

[0043] The fitting members 30 may be manufactured of any of a wide variety of materials to vary the characteristics of the fitting members 30, such as the flexibility and hardness. In one embodiment, the fitting members 30 are manufactured of injection molded nylon. Select regions of the fitting members 30 may also be manufactured of a different material than other regions of the fitting members, or of varying structural thicknesses, such as to vary the flexibility of the fitting members 30 within the select regions.

[0044] A fabric loop (not shown) or other gripping surface may be installed at the top of the fitting members 30 to facilitate entry of the foot 26. Alternatively, a tongue element 90, described in greater detail below, may be installed between the fitting members 30 and the foot 26 which, when manually retracted, facilitates entry. Alternatively, an elastic inner lining 27 may exist between the foot 26 and the fitting members 30 to help position the foot 26 with respect to the sole 12, with the fitting members 30 providing additional security of fit. These alternative embodiments are described in greater detail below.

[0045] FIRST EMBODIMENT

[0046] In a first embodiment, as shown in FIGS. 1A and 1B, the footwear fit system 28 includes a pair of side fitting members 40 that are disposed around the medial and lateral regions of the foot 26 when the foot 26 is positioned within the volume 32. The side fitting members 40 preferably have an arc-like shape that is selected to resemble the shape of the foot 26. The side fitting members 40 act to secure the instep and forefoot areas of the foot 26.

[0047] As illustrated by this embodiment, the pair of side fitting members 40 include a first base portion 42 that extends upwardly from the first side 18 of the sole 12, and a second base portion 48 that extends upwardly from the second side 20 of the sole 12. A first foot-bearing portion 44 extends laterally from the first base portion 42 to a first terminus 46. The first base portion 42 and the first foot-bearing portion 44 together form at least one resilient elongate finger that independently biases the first foot-bearing portion 44 towards the sole 12.

[0048] A second foot-bearing portion 50 extends laterally from the second base portion 48 to a second terminus 52. The second base portion 48 and the second foot-bearing portion 50 together forming at least one resilient elongate finger that independently biases the second foot-bearing portion 50 towards the sole 12. The first terminus 46 is positioned adjacent to the second terminus 52. For purposes of this specification, the first terminus 46 should be consid-ered as positioned adjacent the second terminus 52 as long as they are generally close to each other and together function to fasten the footwear member 10 to the sole 12. As illustrated below, the first terminus 46 and the second terminus 52 can be located in a variety of positions, as long as this functional relationship is maintained. In this embodiment, the side fitting members 30 are sized such that the fingers extend toward the median line of the foot 26, but the first terminus 46 does not overlap the second terminus 52.

[0049] Illustrated in FIG. 1A, the first base portion 42 further includes a first foundation member 54 that extends inwardly from the first base portion 42 into or overlapping the sole 12; and the second base portion 48 includes a second foundation member 56 that extends inwardly from the second base portion 48 into or overlapping the sole 12. The first and second foundation members 54 and 56 function to provide a strong foundation for the first and second base portions 42 and 48 so that they can most effectively bear down on the foot 26 and hold the footwear member 10 in its proper place. One particular benefit of this construction is that the full weight of the user bears down on the first and second base portions 42 and 48 when the user stands on the footwear member 10, thereby providing an especially strong hold on the foot 26 of the user.

[0050] SECOND EMBODIMENT

[0051] In a second embodiment, as shown in FIGS. 2A and 2B, the pair of side fitting members 40 are fundamentally the same as the first embodiment, but are constructed so that the first terminus 46 and the second terminus 52 overlap. By designing the pair of side fitting members 40 so that the first terminus 46 and the second terminus 52 overlap, the pair of side fitting members 40 can exert more gripping power against the foot 26. The first terminus 46 and the second terminus 52 are still considered adjacent to each other, as defined in the present invention, despite the fact that they overlap.

[0052] THIRD EMBODIMENT

[0053] The third embodiment of the footwear fit system 28, as shown in FIGS. 3A and 3B, also includes a rear fitting member 66 that extends upwardly from the rear side 22 of the sole 12. The rear fitting member 66 preferably has a shape that conforms to the rear or heel region of the foot 26. The rear fitting member 66 preferably bears against the calcaneal area of the foot 26 and applies pressure against the foot 26. Preferably, the rear fitting member 66 may be moved in a forwardly or rearwardly direction with respect to the foot 26. The rear fitting member 66 is biased toward a default position (shown in solid lines in FIG. 3B). The rear fitting member 66 may be moved rearwardly toward an extended position that increases the size of the volume 32 and the size of the entryway 34. In one embodiment, the rear fitting member 66 has a range of travel of approximately 15 mm in forwardly and rearwardly direction. The rear fitting member 66 preferably pivots at a location near where the rear fitting member 66 is attached to the sole 12. The footwear fit system 28 may be configured so as to function with or without the rear fitting member 66.

[0054] The fitting members 30 may be integrally attached to the sole 12. Alternately, the fitting members 30 may be attachable and/or adjustable by the user, thereby allowing the user to position the fitting members 30 to a location that
suits the user's needs and tastes. Alternative embodiments of the rear fitting member 66 are described below.

[0055] As shown in FIG. 3A, the side fitting members 40 of this embodiment include regions 64 at the base of the fingers. The regions 64 may be manufactured of a material that would allow for an increased range of travel for the side fitting members 40. The regions 64 may also have a varied structural thickness with respect to the remainder of the fitting members 40 to thereby vary the flexural characteristics of the fitting members 40 in the region 64. Thus, the fingers may be moved with respect to the rest of the side fitting members 40 to increase the size of the volume 32 or the entryway 34.

[0056] FOURTH EMBODIMENT

[0057] The fourth embodiment of the footwear fit system 28, as shown in FIGS. 4 and 5, illustrates another embodiment of the footwear fit system 28 wherein the fitting members 30 include the side fitting members 40 and the rear fitting member 66. The side fitting members 40 have fingers of a size such that the first terminus 46 and the second terminus 52 overlap one another.

[0058] The fitting members 30 bear against the foot 26 when the foot 26 is positioned within the volume to thereby secure the foot 26 within the volume. When incorporated into the footwear member 10, the footwear fit system 28 secures the foot 26 within the footwear member 10. The quantity of fitting members 30 may be selected to vary the amount of pressure applied to the foot 26 and to vary the amount of surface contact between the foot 26 and the fitting members 30. Additionally, the location and shape of the fitting members 30 may also be varied. The amount of force exerted on the foot 26 by each fitting member 30 may be easily adjusted at the manufacturing level by the selection of its material, the material thickness and width, and the degree of deflection incurred when the foot 26 is in place. The pad layer 36 on the inside surface of the fitting members 30 may be installed as desired to adjust pressure, friction and overall comfort.

[0059] In one embodiment, the fitting members 30 and the sole 12 are collectively molded as a single element, which is then incorporated into the sole 12 of the shoe or boot. Where the fitting members 310 are hinged at or near the sole 12, a firm fixation and/or integration of the members 30 to the sole 12 is desired. The members 30 may thus be incorporated with a full or partial length Shank, as commonly used in footwear construction.

[0060] FIFTH EMBODIMENT

[0061] In another embodiment, as shown in FIGS. 6 and 7, the footwear fit system 28 includes a front fitting member 95 that is attached to the front side 24 of the sole 12. For purposes of the present invention, the front side 24 is considered to include the forward portion of the first and second sides 18 and 20 for cases in which the footwear fit system 28 includes an open toe design. The front fitting member 95 includes a front extension member 96 that extends rearwardly over the top of the foot 26 and applies a pressure against the top of the foot 26 through a foot contacting portion 97. The front fitting member 95 moves upwardly and downwardly between an extended and default position, as described in greater detail above. Since this embodiment is functionally similar to the above-described embodiments, it is not described in greater detail herein.

[0062] SIXTH EMBODIMENT

[0063] With reference to FIG. 8, there is shown a boot-type footwear member 10. The footwear fit system 28 is incorporated between an inner lining 27 of the footwear member 10 and the upper 25, in this case the outer surface of the boot. Thus, the inner lining 27 is interposed between the foot 26 and the fit members 30 when the foot 26 is positioned within the volume 32. In use, the wearer inserts the foot 26 into the inner lining 27 and the foot 26 exerts a force that pushes the fitting members 30 toward the extended position, thereby increasing the volume 32. As the foot 26 moves into the volume 32, the bias in the fitting members 30 moves the fitting members 30 back toward the default position so that the fitting members 30 exert pressure against the foot 26 and secure the foot 26 therein.

[0064] It will be appreciated that the footwear fit system 28 could be incorporated in other manners into the footwear member 10. The footwear fit system 28 could also be surrounded by any of a wide variety of uppers 25 or could be secured within an inner lining of the uppers 25. In such cases, the fit system 10 would not be visible but would rather be concealed by the upper 25.

[0065] SEVENTH EMBODIMENT

[0066] FIG. 9 illustrates a seventh embodiment of the footwear fit system 28 in which one or more articulating plates 60 are attached to the terminus 46 at least one of the fitting members 30. In the illustrated embodiment, the fit system 28 includes a pair of side fitting members 40 that each have a terminus 46 that are located near the instep region of the foot 26. The plates 60 are preferably connected to the fitting members 40 in such a way that the plates 60 are allowed to articulate about one or more axes, such as with a pivot 62, as shown. The fitting members 40 are resiliently biased to hold the articulating plates 60 against the foot 26. The articulating plates 60 are allowed to assume an orientation substantially matching the contact surface of the foot 26, thus providing relatively even distribution of pressure against the foot 26. The articulating plates 60 may be manufactured of a semi-rigid material that is somewhat flexible, such as pressure formed or injection molded polymer. The articulating plates 60 may also be configured to provide movable support with progressive resistance through a defined range of motion, such as that desirable in a ski boot or ice skate.

[0067] EIGHTH EMBODIMENT

[0068] FIG. 10 illustrates an eighth embodiment of the invention, wherein the footwear fit system 28 is installed in a casual shoe. In this embodiment, the upper 25 is formed as an ordinary casual shoe and the side fitting members 40 are integrated with the upper 25.

[0069] This embodiment further includes a tongue element 90 adapted to move from a primary position wherein the tongue element 90 is located between the sole 12 and the first and second foot-bearing portions 44 and 50, to a secondary position wherein the tongue element 90 is located between the first foot-bearing portion 44 and the second foot-bearing portion 50. The tongue element 90 functions to push the first terminus 46 away from the second terminus 52,
thereby opening the side fitting members 40 and facilitating the insertion of the foot 26 into the footwear member 10.

[0070] The fitting members 30 can be covered, at least in part, by a padded layer 26, as illustrated by FIGS. 11A-11E. The fitting members 30 can also include one or more reinforcing ribs 31 to increase the strength of the fitting members 30, as shown in FIG. 11B, or one or more flex slots 33 can be added, as shown in FIG. 11D, to soften the contact of the fitting members 30 with the foot 26 of the user.

[0071] HEEL PORTION

[0072] In another embodiment, as shown in FIGS. 12-15, the footwear fit system 28 further includes a heel portion 70 positioned adjacent a rear side 22 of the sole 12. The heel portion 70 is preferably resiliently biased to move from a first position adjacent the sole 12 towards a second position above the sole 12. The heel portion 70 includes an elongate heel support 72 that is attached at a first end 74 to the first side 18 and at a second end 76 to the second side 20. The heel portion 70 includes a heel contacting portion 78 between the first and second ends 74 and 76 for contacting the foot 26 of the user to further secure the foot 26 on the sole 12.

[0073] As shown in FIGS. 12-13, the heel portion 70 preferably further includes a plurality of roller elements 80 rotatably mounted on the heel contacting portion 78. The roller elements 80 enable the user to step on the heel portion 70 while inserting the foot 26 under the fitting members (not shown in this Figure), and then slide the foot 26 forward so that the heel portion 70 can pivot back to the second position above the sole 12.

[0074] In some embodiments, as shown in FIGS. 14 and 15, the heel contacting portion 78 is resilient enough to pivot to the second position without assistance, based on the flexural characteristics of the element. In another embodiment, however, the heel contacting portion 78 further includes a torsion spring element 82 that is operably attached to, or within, the heel portion 70 to bias the heel portion 70 towards the second position.

[0075] There are several advantages of the footwear fit system 28:

[0076] a) The fitting members 30 allow smooth, seam-free contact areas against the foot 26 for improved comfort.

[0077] b) The range of travel designed into the fitting members 30 can allow a wider range of foot 26 shapes to be accommodated in a given size. This could lead to a fewer number of sizes needing to be stocked by the retailer of the footwear member 10. Additional applications could be developed that would allow multiple whole sizes of feet to be secured within a single shoe or boot size. This would provide for efficient use of generic/community footwear stocks, for example, in damage control or fire fighting situations, rental of sports footwear, and longer use of a given article of footwear for growing children.

[0078] c) The footwear fit system 28 does not require the mechanical components of laces, hook and pile fasteners, strap clips, or buckles. This offers potential cost savings, but more importantly, allows the foot 26 to be inserted without the need to manually affix, tighten or tie these conventional systems. This could be particularly helpful for elderly or handicapped users who presently need assistance to put on their footwear.

[0079] d) As a shoe or boot is used, re-tightening of the laces or other closure system is often required. Since the fitting members 30 exert a continuous pressure onto the foot 26, there is no need to periodically adjust the closure.

[0080] e) The fit members 30 may be fabricated of injection molded or pressure formed plastic materials, and tooling expenses will thus be incurred. However, with most or all of the fit system components pre-fabricated in this way, substantial savings in total product costs could be realized with respect to laces, eyelets, straps, fasteners, Velcro, and the labor required to install them. A production method is also foreseen in which the fitting members 30, outsole and padding areas are integrated into a multiple density molding process, with the finished molded product requiring little, if any, additional hand labor.

[0081] f) Overall fit quality could be improved using the subject design. It is known that certain areas of the foot 26 are particularly sensitive to pressure. Using fitting members in less sensitive areas can allow secure fitting of the shoe or boot, while reducing or eliminating the pressure at sensitive points which is common with more traditional designs.

[0082] Although this invention has been described in terms of certain preferred embodiments, other embodiments that are apparent to those of ordinary skill in the art are also within the scope of this invention. Accordingly, the scope of the present invention is intended to be defined only by reference to the appended claims.

[0083] All patents, patent applications, and other documents and printed matter cited or referred to in this application is hereby incorporated by reference in full.

What is claimed:
1. A footwear fit system for securing a person’s foot to a sole, the footwear fit system comprising:

one or more fitting members extending upwardly from the sole and being biased toward a position that bears against a wearer’s foot when the foot is positioned on the sole so as to secure the sole to the foot.

2. The footwear fit system of claim 1, wherein a side fitting member is located on a side region of the sole such that the side fitting member bears against a medial or lateral region of the wearer’s foot when the foot is positioned on the sole, wherein at least a portion of the side fitting member bears downwardly against the foot toward the sole so as to press against the foot toward the sole.

3. The footwear fit system of claim 2, wherein a rear fitting member is located on a region of the sole such that the rear fitting member bears against a calcaneus region of the wearer’s foot when the foot is positioned on the sole.

4. The footwear fit system of claim 3, wherein the side and rear fitting members are biased toward a default position so as to collectively define a volume that is smaller than the volume of a wearer’s foot, the side and rear fitting members being moveable to an extended position such that the volume increases in size.
5. The footwear fit system of claim 1, wherein the fitting members comprise plural fitting members that are integrated to one another.

6. The footwear fit system of claim 1, wherein the one or more fitting members are located at various attachment points to the sole.

7. The footwear fit system of claim 1, wherein an upper is attached to the sole and wherein the fitting members are positioned within the upper.

8. The footwear fit system of claim 1, wherein an inner lining or panel is disposed within the upper and wherein the fitting members are interposed between the inner lining and the upper.

9. The footwear fit system of claim 1, wherein at least one articulating panel is attached to a fitting member, the articulating panel bearing against the person's foot when the foot is positioned on the sole so that the articulating panel conforms to the shape of the wearer's foot.

10. Footwear comprising:
a sole having a first side and a second side;
a first base portion that extends upwardly from the first side;
a first foot-bearing portion that extends laterally from the first base portion to a first terminus, the first base portion and the first foot-bearing portion together forming at least one resilient elongate finger that independently biases the first foot-bearing portion towards the sole;
a second base portion that extends upwardly from the second side;
a second foot-bearing portion that extends laterally from the second base portion to a second terminus, the second base portion and the second foot-bearing portion together forming at least one resilient elongate finger that independently biases the second foot-bearing portion towards the sole; and
the first terminus being positioned adjacent to the second terminus.

11. The footwear of claim 10 further comprising a heel portion positioned adjacent a rear side of the sole, the heel portion being resiliently biased to move from a first position adjacent the sole towards a second position above the sole.

12. The footwear of claim 11 wherein the heel portion includes an elongate heel support that is attached at a first end to the first side and at a second end to the second side, the heel portion having a heel contacting portion between the first and second ends.

13. The footwear of claim 12 further comprising a plurality of roller elements rotatably mounted on the heel contacting portion.

14. The footwear of claim 11 further comprising a torsion spring element that is operably attached to the heel portion to bias the heel portion towards the second position.

15. The footwear of claim 10 further comprising a tongue element adapted to move from a primary position wherein the tongue element is located between the sole and the first and second foot-bearing portions, to a secondary position wherein the tongue element is located between the first and second foot-bearing portions, the tongue element functioning to push the first terminus away from the second terminus.

16. The footwear of claim 10 further comprising an articulating plate attached to the first terminus with a pivot.

17. The footwear of claim 10 further comprising a first foundation member that extends inwardly from the first base portion into or overlapping sole.

18. The footwear of claim 17 further comprising a second foundation member that extends inwardly from the second base portion into or overlapping the sole.

19. Footwear comprising:
a sole having a first side and a second side;
a first base portion that extends upwardly from the first side; and
a first foot-bearing portion that extends laterally from the first base portion to a first terminus, the first base portion and the first foot-bearing portion together forming at least one resilient elongate finger that independently biases the first foot-bearing portion towards the sole.

20. The footwear of claim 19 further comprising a heel portion positioned adjacent a rear side of the sole, the heel portion being resiliently biased to move from a first position adjacent the sole towards a second position above the sole.

21. The footwear of claim 20 wherein the heel portion includes an elongate heel support that is attached at a first end to the first side and at a second end to the second side, the heel portion having a heel contacting portion between the first and second ends.

22. The footwear of claim 21 further comprising a plurality of roller elements rotatably mounted on the heel contacting portion.

23. The footwear of claim 19 further comprising an articulating plate attached to the first terminus with a pivot.

24. Footwear comprising:
a sole having a first side, a second side, and a rear side; and
a heel portion positioned adjacent a rear side of the sole, the heel portion being resiliently biased to move from a first position adjacent the sole towards a second position above the sole.

25. The footwear of claim 24 wherein the heel portion includes an elongate heel support that is attached at a first end to the first side and at a second end to the second side, the heel portion having a heel contacting portion between the first and second ends.

26. The footwear of claim 25 further comprising a plurality of roller elements rotatably mounted on the heel contacting portion.

27. The footwear of claim 24 further comprising a torsion spring element that is operably attached to the heel portion to bias the heel portion towards the second position.

28. Footwear comprising:
a sole having a top sole surface and a front side; and
a front fitting member that is attached to the front side of the sole, the front fitting member having a front extension member that extends rearwardly, the front fitting member being resiliently biased to independently position a foot contacting portion for applying a pressure against a top of a foot of a user when the foot is positioned on the top sole surface of the sole.

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