A removably insertable footbed assembly for adjusting sizing of an article of footwear is provided, wherein the footbed assembly adjusts the volume available within the cavity of the article of footwear. The footbed assembly comprises: a) an upper component having a heel region, a midfoot region, and a forefoot region, and having an upper and lower surface, wherein the lower surface of the forefoot region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component; and b) a lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the lower component is releasably attachable to the upper component. Also provided are articles of footwear comprising an adjustable footbed assembly; kits including an upper component and several lower components; and methods for fitting footwear to an individual's foot by using an adjustable footbed assembly or component thereof.
ADJUSTABLE FOOTBED ASSEMBLY FOR AN ARTICLE OF FOOTWEAR

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 61/083,581 filed Jul. 25, 2008, which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates generally to an article of footwear, and relates more specifically to an adjustable footbed assembly for an article of footwear.

BACKGROUND OF THE INVENTION

[0003] The size of the human foot varies greatly from one individual to another, and even from one foot to the other foot on the same individual. The variation may be in terms of the measurement of foot length, forefoot length, forefoot width, forefoot girth, and/or heel width, for example. The most significant variation observed, however, is in the forefoot width and girth measurements in individuals with the same foot length. Accordingly, a standard shoe of particular length is unlikely to properly fit all individuals with that particular foot length. When a shoe fits improperly (i.e., too tight or too loose), it often causes discomfort, potentially causing rubbing, irritation, and blisters. Shoes that have been custom made for a particular individual are unlikely to cause such undesirable effects, but such custom-made shoes are often very expensive and not necessarily an option for the general consumer.

[0004] Footwear manufacturers have attempted to address this foot size variation by producing shoes of several different widths (e.g., narrow, medium, wide, and extra wide) for each foot length. However, this approach creates significant expense and complexity for the footwear company because it must manufacture, stock, and distribute more stock keeping units for each type of shoe. Because each stock keeping unit requires its own set of molds, increasing the number of stock keeping units imposes an additional capital and time investment on the part of the manufacturer. Furthermore, many of the manufacturers accommodate variations in width only by creating shoe upper patterns with a larger girth, rather than making adjustments to sole of the shoe. Therefore, the resulting footwear still may not provide the desired comfortable fit.

[0005] Other means that footwear manufacturers have employed for adapting to foot size variation include the use of laces, buckles, touch fasteners, and pressurized air and dial operated cables. However, these adaptations only affect the girth provided by the shoe upper, and therefore, the resulting footwear may not provide the desired comfortable fit. In addition, such adaptations are not suitable for use with many shoe styles.

[0006] What is needed is a footbed assembly for use in an article of footwear that can be adjusted to adapt to feet of varying width and/or girth. The needed adjustable footbed assembly should provide a comfortable sole that provides proper cushioning and support while standing and walking. Also needed are articles of footwear comprising an adjustable footbed assembly, kits comprising the components of the adjustable footbed assembly, and methods for fitting footwear to an individual’s foot by using an adjustable footbed assembly or portion thereof.

SUMMARY OF THE INVENTION

[0007] Certain embodiments of the invention provide a removably insertable footbed assembly for adjusting sizing of an article of footwear, wherein the footbed assembly adjusts the volume within the forefoot and/or midfoot region of the article of footwear. The footbed assembly preferably comprises: a) an upper component having a heel region, a midfoot region, and a forefoot region, and having an upper and lower surface, wherein the lower surface of the forefoot region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component; and b) a lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the lower component is releasably attachable to the forefoot region of the upper component.

[0008] In some embodiments, at least one attachment element is a hook and loop fastener layer. In certain other embodiments, the lower surface of the upper component further comprises at least one groove for releasably receiving at least one ridge on the upper surface of the lower component. In some embodiments, the forefoot region of the lower component has an approximate thickness between 2 mm and 3 mm. In other embodiments, the forefoot region of the lower component has an approximate thickness between 4 mm and 6 mm. In yet other embodiments, the footbed assembly is releasably attachable to the midsole or outsole of an article of footwear.

[0009] Certain embodiments of the invention also provide articles of footwear, comprising: an outsole for contacting the ground; an upper attached to the outsole, the upper and outsole defining a cavity for receiving a wearer's foot; and a removably insertable footbed assembly having: a) an upper component having a heel region, a midfoot region, and a forefoot region, and having an upper and lower surface, wherein the lower surface of the forefoot region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component; and b) a lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the lower component is releasably attachable to the upper component. In certain embodiments, the at least one attachment element is a hook and loop fastener layer. In certain embodiments, the lower surface of the upper component further comprises at least one groove for releasably receiving at least one ridge on the upper surface of the lower component.

[0010] Certain embodiments of the invention provide kits for adjusting sizing in the forefoot region of an article of footwear, the kit comprising a footbed having: an upper component having a heel region, a midfoot region, and a forefoot region, and having an upper and lower surface, wherein the lower surface of the forefoot region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component; a first lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the first lower component is releas-
ably attachable to the upper component; and a second lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the lower component is releasably attachable to the upper component, and wherein the first lower component and the second lower component differ in thickness. In certain embodiments, the forefoot region of the first lower component has a thickness between approximately 2 mm and 3 mm, and the forefoot region of the second lower component has an approximate thickness of 4 mm and 6 mm. In some embodiments, the kit further comprises at least one additional lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the additional lower component is releasably attachable to the upper component, and wherein the additional lower component differs in thickness from the first and second lower components. In certain embodiments, there can be any number of additional lower components of differing thicknesses.

[0011] Embodiments of the present invention provide methods for selecting footwear to fit a wearer’s foot, comprising: selecting an article of footwear of a predetermined size; selecting an upper component of a removable insertable footbed assembly sized for use in the predetermined size of the article of footwear, wherein the upper component has a heel region, a midfoot region, and a forefoot region, and has an upper and lower surface, wherein the lower surface of the forefoot region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component; selecting a first lower component from a plurality of lower components for the footbed assembly, the first lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the first lower component is releasably attachable to the upper component; and attaching the selected lower component to the upper component to produce a footbed assembly by associating the attachment elements on the lower component and the upper component; and inserting the footbed assembly into the article of footwear. In certain embodiments, the methods further comprise the step of: adjusting the fit of the article of footwear to the wearer’s foot by replacing the selected lower component with another lower component having a different thickness.

BRIEF DESCRIPTION OF THE FIGURES

[0012] FIG. 1 shows one possible embodiment 100 of the adjustable footbed assembly. FIG. 1A is an exploded top perspective view of the upper and lower components (112 and 122) of the adjustable footbed assembly according to certain embodiments of the invention. FIG. 1B is an exploded bottom perspective view of the upper and lower components (112 and 122) of the adjustable footbed assembly according to certain embodiments of the invention.

[0013] FIG. 2 shows one possible embodiment 200 of the adjustable footbed assembly. FIG. 2A is an exploded top perspective view of the upper and lower components (212 and 222) of the adjustable footbed assembly according to certain embodiments of the invention. FIG. 2B is an exploded bottom perspective view of the upper and lower components (212 and 222) of the adjustable footbed assembly according to certain embodiments of the invention.

DETAILED DESCRIPTION

[0014] The various embodiments of the present invention may be understood more readily by reference to the following detailed description. It is to be understood that this invention is not limited to specific materials or conditions, which may vary, and the numerous modifications and variations therein will be apparent to those skilled in the art. It is also to be understood that the terminology used herein is for the purpose of describing certain embodiments only and is not intended to be limiting. It is further to be understood that unless specifically defined herein, the terminology used herein is to be given its traditional meaning as known in the relative art. As used in the specification and in the claims, “a” or “an” can mean one or more, depending upon the context in which it is used. Thus, for example, reference to “a groove” can mean that one or more than one grooves can be utilized.

[0015] Traditionally, athletic shoes and non-athletic shoes worn for both casual events and more formal events have been made in a variety of widths to accommodate differences in the shape and sizes of feet. Footwear manufacturers have employed other methods for adapting to foot size variation include the use of laces, buckles, touch fasteners, and pressurized air and dial operated cables. However, these adaptations only affect the girth provided by the shoe upper, and therefore, the resulting footwear may not provide the desired comfortable fit. In addition, such adaptations are not suitable for use with many shoe styles. The adjustable fit footbed assemblies, kits, and methods disclosed herein overcome the disadvantages and limitations of the prior art, providing a removable footbed insert assembly that allows for an adjustable fit for each individual. FIGS. 1 and 2 depict the components of certain embodiments of such an adjustable footbed insert assembly for use in an article of footwear and are described further below.

[0016] As used herein, the term “shoe” will be used to refer to any article of footwear in which the below claimed invention can be used and should not be limited only to a traditional closed toe shoe. Shoes are generally comprised of an outsole, a midsole, a footbed, and an upper. The upper surrounds the foot (or attaches the foot to the sole in the case of sandals) and may provide stability and ankle support to the wearer of the shoe. When a shoe is worn, the foot generally rests in the upper, on top of the footbed. As used herein, the terms “footbed” and “insole” are used interchangeably and refer to the layer on top of the midsole which provides cushioning and support to the foot.

[0017] In accordance with certain embodiments of the present invention, the footbed assembly comprises: a) an upper component having a heel region, a midfoot region, and a forefoot region, and having an upper and lower surface, wherein the lower surface of the forefoot region, the midfoot region, or both have at least one attachment element; and b) a lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the lower component is releasably attachable to the forefoot region of the upper component. According to certain embodiments, the lower component is also releasably attachable to the midfoot region of the upper component.
Referring now to the drawings, FIG. 1 depicts the adjustable fit footbed assembly according to certain embodiments of the present invention. FIG. 1A is an exploded top perspective view of the upper component 112 and lower component 122 of the adjustable footbed assembly 100 according to certain embodiments of the invention. The upper surface 110 of the upper component 112 is designed to support the foot and extends the full length of the foot from the heel to the toes. The upper component 112 may comprise a pad or other cushion for the comfort and/or support of the foot. The pads or cushion may be located in the forefront region of the upper component 112 (e.g., 102, 104, and 106), the heel region, or a combination thereof (e.g., 108). The upper component 112 may be formed from resilient materials, for example, an elastomeric foam such as ethylene vinyl acetate (EVA) or polyurethane (PU) foam, or other such materials commonly used in shoe midsoles, insoles, or sockliners. According to certain embodiments, the upper component, lower component, or both may comprise multiple material layers, each having a different thickness, density, and/or rigidity. The lower component 122 comprises at least one attachment element (e.g., 114, 116, and 118) on the upper surface of the midfoot region, the forefront region, or both, such that the lower component is releasably attachable to the forefront region of the upper component. The attachment element(s) may comprise a hook and loop fastener (e.g., VELCRO®), adhesive, staple, snap, or the like as is known in the art. In certain embodiments, the attachment element comprises a hook and loop fastener. FIG. 1A shows one embodiment in which the lower component 122 comprises two attachment elements on the forefront region (116 and 118) and one attachment element on the midfoot region (114) of the lower component.

FIG. 1B is an exploded bottom perspective view of the upper component 112 and lower component 122 of the adjustable footbed assembly 100 from FIG. 1A. FIG. 1B shows that the upper component 112 comprises two attachment elements on the forefront region (127 and 128) and one attachment element on the midfoot region (126) of the upper component. The attachment elements on the upper and lower components provide guidance for properly assembling the upper and lower components of the footbed assembly 100.

FIG. 2 shows another embodiment 200 of the disclosed adjustable footbed assembly. FIG. 2A is an exploded top perspective view of the upper and lower components (212 and 222) of the adjustable footbed assembly according to certain embodiments of the invention. As in the first embodiment described above, in this embodiment, the upper surface 210 of the upper component 212 is designed to support the foot and extends the full length of the foot from the heel to the toes. The upper component 212 comprises a pad or other cushion for the comfort and/or support of the foot, located in the forefront region of the upper component 212 (e.g., 202, 204, and 206), the heel region, or a combination thereof (e.g., 208). The lower component 222 comprises at least one attachment element (e.g., 214, 216, and 218) on the upper surface of the midfoot region, the forefront region, or both, such that the lower component is releasably attachable to the forefront region of the upper component. FIG. 2A shows one embodiment, in which the lower component 222 comprises three ridges 220, which provide guidance for properly assembling the upper and lower components of the footbed assembly 200.

FIG. 2B is an exploded bottom perspective view of the upper and lower components (212 and 222) of the adjustable footbed assembly according to certain embodiments of the invention. FIG. 2B shows that the upper component 212 comprises two attachment elements on the forefront region (227 and 228) and one attachment element on the midfoot region (226) of the upper component. The upper component 212 also comprises three grooves 230 for receiving the three ridges 224 of the lower component 222 shown in FIG. 2A. The attachment elements, ridges, and grooves on the upper and lower components provide guidance for properly assembling the upper and lower components of the footbed assembly. Alternatively, the upper component may comprise the ridges, and the lower component may comprise the grooves. In other embodiments, the ridges and grooves may be substituted with some other upraised mark or pattern in one component, and a corresponding recessed portion or pattern in the other component.

The present disclosure also provides articles of footwear, comprising: an outsole for contacting the ground; an upper attached to the outsole, the upper and outsole defining a cavity for receiving a wearer’s foot; and a removable insertable footbed assembly having: a) an upper component having a heel region, a midfoot region, and a forefront region, and having an upper and lower surface, wherein the lower surface of the forefront region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component; and b) a lower component having a midfoot region and a forefront region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefront region, or both have at least one attachment element such that the lower component is releasably attachable to the forefront region of the upper component. According to certain embodiments, the lower component is also releasably attachable to the midfoot region of the upper component. In certain embodiments, at least one attachment element is a hook and loop fastener layer. In certain embodiments, the lower surface of the upper component further comprises at least one groove for releasably receiving at least one ridge on the upper surface of the lower component.

Certain embodiments of the invention further provide kits for adjusting sizing in the forefront region of an article of footwear, the kit comprising a footbed having: an upper component having a heel region, a midfoot region, and a forefront region, and having an upper and lower surface, wherein the lower surface of the forefront region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component, a first lower component having a midfoot region and a forefront region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefront region, or both have at least one attachment element such that the lower component is releasably attachable to the forefront region of the upper component; and a second lower component having a midfoot region and a forefront region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefront region, or both have at least one attachment element such that the lower component is releasably attachable to the forefront region of the upper component. In certain embodiments, the forefront region of the first lower component has an approximate thickness of 2 mm and 3 mm, and the forefront region of the second lower component has an approximate thickness of 4 mm and 6 mm. In some embodiments, the kit further comprises at least one additional lower component having a midfoot region and a forefront region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefront region, or both have at least one attachment element such that the additional lower component is releasably attachable to the forefront region of the upper component, and wherein the additional lower component differs in thickness from the first and second lower components. According to certain embodiments, the at least one additional

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lower component is also releasably attachable to the midfoot region of the upper component.

[0024] The present adjustable footbed assemblies preferably allow one shoe to have the capability to fit a foot of at least two different width sizes (e.g., a medium and wide width) with a simple adjustment to the footbed itself. Currently, in most situations, a retailer has to stock a medium and wide width in most every size to accommodate customers' needs. Each customer has to purchase one or the other shoe, depending on his or her foot width. The current adjustable footbed system allows a customer to fit the shoe on his foot. In one example, if the shoe fits well, then no adjustment is needed. However, if the shoe is tight, then the customer simply removes the lower component, and the shoe fits goes from a medium to a wide. If after wearing the shoe, it stretches and becomes too loose, the customer can reattach the footbed lower component to tighten the fit. This adjustable footbed assembly system also allows the retailer to carry less inventory as they do not have to stock several widths (e.g., medium and wide in the present example) in the same shoe.

[0025] Certain embodiments of the invention provide methods for selecting footwear to fit a wearer's foot. The present methods involve selecting an article of footwear of a predetermined size; selecting an upper component of a removable insertable footbed assembly sized for use in the predetermined size of the article of footwear, wherein the upper component has a heel region, a midfoot region, and a forefoot region, and having an upper and lower surface, wherein the lower surface of the forefoot region, the midfoot region, or both have at least one attachment element for releasably attaching a lower component; selecting a first lower component from a plurality of lower components for the footbed assembly, the first lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface of the midfoot region, the forefoot region, or both have at least one attachment element such that the lower component is releasably attachable to the forefoot region of the upper component; and attaching the selected lower component to the upper component to produce a footbed assembly by associating the attachment elements on the lower component and the upper component; and inserting the footbed assembly into the article of footwear. According to certain embodiments, the lower component is also releasably attachable to the midfoot region of the upper component. In certain embodiments, the methods further comprise the step of: adjusting the fit of the article of footwear to the wearer's foot by selecting the lower component with another lower component having a different thickness.

[0026] It should be understood that the described embodiments have been disclosed by way of example, and that other modifications may occur to those skilled in the art without departing from the scope and spirit of the appended claims.

1. A removable insertable footbed assembly for adjusting sizing of an article of footwear, comprising:

   an upper component having a heel region, a midfoot region, and a forefoot region, the upper component comprising an upper and lower surface, wherein the lower surface comprises at least one attachment element; and

   a lower component having a midfoot region and a forefoot region, the lower component comprising an upper and lower surface, wherein the upper surface comprises at least one attachment element wherein the lower component is releasably attachable to the forefoot region of the upper component, wherein the footbed assembly is removably insertable into the article of footwear and adjusts the volume available within the forefoot region of the article of footwear.

2. The footbed assembly of claim 1, wherein at least one attachment element is located in the forefoot region or one attachment element is located in the midfoot region.

3. (canceled)

4. (canceled)

5. The footbed assembly of claim 1, wherein the at least one attachment element comprises a hook and loop fastener layer.

6. The footbed assembly of claim 1, wherein the lower surface of the upper component further comprises at least one groove and the upper surface of the lower component comprises at least one ridge, wherein the groove of the upper component releasably receives the ridge of the lower component.

7. The footbed assembly of claim 1, wherein the forefoot region of the lower component has an approximate thickness of between 2 mm and 6 mm.

8. (canceled)

9. The footbed assembly of claim 1, wherein the footbed assembly is releasably attachable to the midsole of an article of footwear or the footbed assembly is releasably attachable to the outsole of an article of footwear.

10. (canceled)

11. The footbed assembly of claim 1, further comprising a second lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface comprises at least one attachment element such that the lower component is releasably attachable to the forefoot region of the upper component, and wherein the first lower component and the second lower component differ in thickness.

12. An article of footwear, comprising:

   an outsole for contacting the ground;

   an upper attached to the outsole, the upper and outsole defining a cavity for receiving a wearer's foot; and

   a removably insertable footbed assembly having: a) an upper component having a heel region, a midfoot region, and a forefoot region, the upper component comprising an upper and lower surface, and the lower surface comprising at least one attachment element; and b) a lower component having a midfoot region and a forefoot region, the lower component comprising an upper and lower surface, and the upper surface comprising at least one attachment element wherein the lower component is releasably attachable to the forefoot region of the upper component.

13. The article of footwear of claim 12, wherein at least one attachment element is located in the forefoot region or one attachment element is located in the midfoot region.

14. (canceled)

15. (canceled)

16. The article of footwear of claim 12, wherein at least one attachment element comprises a hook and loop fastener layer.

17. The article of footwear of claim 12, wherein the lower surface of the upper component further comprises at least one groove and the upper surface of the lower component comprises at least one ridge, wherein the groove of the upper component releasably receives the ridge of the lower component.

18. A kit for adjusting sizing of an article of footwear, the kit comprising a footbed having:

   an upper component having a heel region, a midfoot region, and a forefoot region, and having an upper and lower surface, wherein the lower surface comprises at least one attachment element; and
a first lower component having a midfoot region and a forefoot region, the lower component comprising an upper and lower surface, wherein the upper surface comprises at least one attachment element wherein the first lower component is releasably attachable to the upper component; and

a second lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface comprises at least one attachment element wherein the second lower component is releasably attachable to the upper component, and wherein the first lower component and the second lower component differ in thickness.

19. The kit of claim 18, wherein at least one attachment element is located in the forefoot region or one attachment element is located in the midfoot region.

20. (canceled)

21. (canceled)

22. The kit of claim 18, wherein the forefoot region of the lower component has an approximate thickness of between 2 mm and 6 mm.

23. (canceled)

24. The kit of claim 18, further comprising a third lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface comprises at least one attachment element wherein the third lower component is releasably attachable to the upper component, and wherein the third lower component differs in thickness from the first and second lower components.

25. The kit of claim 18, further comprising a plurality of lower components each having a midfoot region and a forefoot region, and each having an upper and lower surface, wherein the upper surface of each lower component comprises at least one attachment element wherein each lower component is releasably attachable to the upper component, and wherein each lower component in the plurality of lower components differs in thickness from the first and second lower components.

26. A method of selecting footwear to fit a wearer's foot, comprising:

selecting an article of footwear of a predetermined size;
selecting an upper component of a removably insertable footbed assembly sized for use in the predetermined size of the article of footwear, wherein the upper component has a heel region, a midfoot region, and a forefoot region, and has an upper and lower surface, wherein the lower surface comprises at least one attachment element;
selecting a first lower component from a plurality of lower components for the footbed assembly, the first lower component having a midfoot region and a forefoot region, and having an upper and lower surface, wherein the upper surface comprises at least one attachment element wherein the first lower component is releasably attachable to the upper component; and
attaching the selected lower component to the upper component to produce a footbed assembly by associating the attachment elements on the lower component and the upper component; and
inserting the footbed assembly into the article of footwear.

27. The method of selecting footwear of claim 26, wherein at least one attachment element is located in the forefoot region or one attachment element is located in the midfoot region.

28. (canceled)

29. (canceled)

30. The method of selecting footwear of claim 26, further comprising the step of:

adjusting the fit of the article of footwear to the wearer's foot by replacing the selected lower component with a different lower component having a different thickness.

31. The method of selecting footwear of claim 26, wherein the at least one attachment element comprises a hook and loop fastener layer.

32. The method of selecting footwear of claim 26, wherein the lower surface of the upper component further comprises at least one groove and the upper surface of the lower component comprises at least one ridge, wherein the groove of the upper component releasable receives the ridge of the lower component.

33. The method of selecting footwear of claim 26, wherein the forefoot region of the first lower component has an approximate thickness of between 2 mm and 6 mm.

34. (canceled)