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(54) Title: SHOE AND METHOD OF MAKING SAME

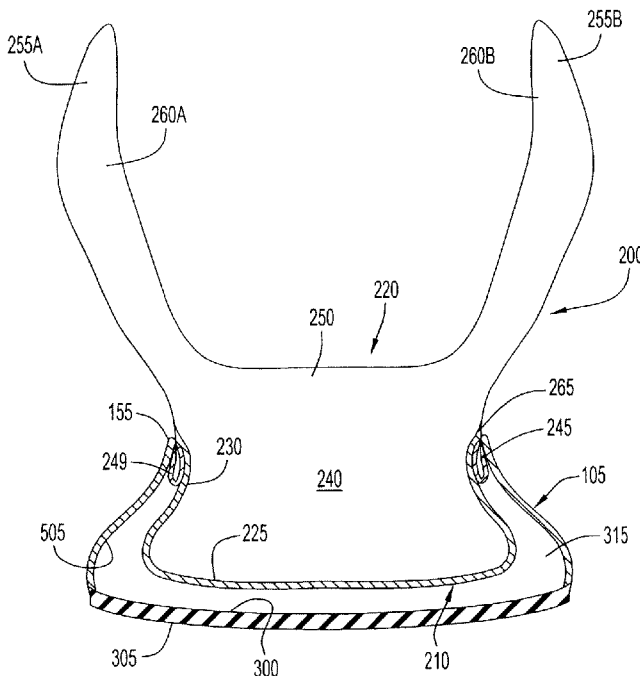


FIG.3

(57) Abstract: The present invention is directed toward a shoe including an outsole, an upper, and a lining member integrated into the shoe. The sling includes a receptacle portion and a fastener assembly portion. The receptacle portion, which generally lines the interior of the shoe, is secured along the collar of the upper such that the sock is movably suspended within the foot cavity. The fastener assembly includes a central web and fasteners that wrap around the ankle of a wearer.

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SHOE AND METHOD OF MAKING SAME

FIELD OF THE INVENTION

[001] The present invention relates generally to shoes, and, in particular, to a shoe including an integrated sling operable to move within the shoe, as well as to a method of forming a shoe.

SUMMARY OF THE INVENTION

[002] The present invention is directed toward a shoe with a sling or lining member integrated into the shoe. The shoe includes an upper and a sole that define an interior shoe cavity operable to receive a foot. The sling includes a receptacle and a fastener assembly. The sling is secured to the collar such that the receptacle is suspended within the shoe cavity, moving freely therein. The fastener assembly is configured to wrap around the leg/ankle of a foot. The fastener assembly includes a central web and one or more fastener members. In operation, the central web extends above the shoe collar to generally cover the Achilles tendon of the foot, while the fastener members are wrapped around the ankle of the foot and secured to each other on the side of the ankle opposite the central web.

BRIEF DESCRIPTION OF THE DRAWINGS

[003] FIG. 1A illustrates a front perspective view of a shoe including a sling in accordance with an embodiment of the invention.

[004] FIG. 1B illustrates a rear perspective view of the shoe shown in FIG. 1A.

[005] FIG. 1C illustrates a side perspective view of the shoe shown in FIG. 1A.

[006] FIG. 2 illustrates an isolated view of the sling in accordance with an embodiment of the invention.

[007] FIG. 3 illustrates a front cross-sectional view of the shoe of FIG. 1A, showing the sling connected to the collar of the upper.

[008] FIG. 4 is a flow diagram showing the steps of forming the shoe shown in FIG. 1A.

[009] FIGS. 5A and 5B illustrate the formation of the upper.

[0010] FIG. 5C illustrates an exploded view of the shoe of FIG. 1A, showing the interrelationship of components forming the shoe.

[0011] FIG. 6 illustrates the shoe of FIG. 1A positioned on the foot of a wearer.

[0012] FIG. 7 illustrates a side view of shoe in accordance with another embodiment of the invention.

[0013] FIG. 8 illustrates a side view of shoe in accordance with another embodiment of the invention.

[0014] Like reference numbers have been utilized to identify like components throughout the figures.

DETAILED DESCRIPTION OF THE INVENTION

[0015] FIGS. 1A – 1C illustrate a shoe in accordance with an embodiment of the invention. As illustrated, the shoe **100** includes an upper **105** and a sole **110**. The front or forefoot portion **115** of the upper **105** includes a toe cap **120** disposed at its front and a throat **125** disposed rearward of the toe cap. The intermediate portion **130** of the upper **105** is defined by the vamp **135** (i.e., the section of the upper disposed rearward of the throat **125** that covers the front of the foot as far back as the quarter). The rear or heel portion **140** of the upper **105** substantially envelops the heel of the foot. The heel portion **140** includes the quarter **145** with a heel cap **147** and an optional counter **150** (a generally vertical strip of material aligned with the longitudinal axis of the shoe that is configured to strengthen the quarter).

[0016] An ankle collar or cuff **155** is formed into the top of the upper **105**, extending forward from the heel portion **140** to the front portion **115**, terminating proximate the throat **125**. The ankle collar **155** defines a foot opening **160** that permits the passage of foot into the shoe. The ankle collar **155** further serves as the point of attachment for a stretchable sling (discussed in greater detail below).

[0017] With the above-described configuration, the upper **105** and the sole **110** cooperate to define a foot or shoe cavity **315** (FIG. 3) that receives the foot of the wearer.

[0018] The upper **105** is secured to the sole **110** around its bottom edge **545** (FIG. 5B) along a joint or feather **165**, e.g., by stitching, adhesive bonding, a welt (a strip of

material that joins the upper to the sole), etc. The sole **110** defines an interior surface or insole **305** (FIG. 3) that faces the bottom of the foot and an exterior surface or outsole **310** (FIG. 3) that faces the walking surface. The shoe **100** may further include a pad coupled to the insole **305** to provide additional cushioning to the shoe.

[0019] The rear section of the sole **110** may include a heel **170** configured to support the heel of the foot, raising the rear of the shoe **100** in relation to the front. The heel **170** may possess any shape and any dimensions suitable for its described purpose. The heel **170** typically includes a top piece that touches ground, a heel seat connected to outsole, and a front-facing surface or breast.

[0020] In one embodiment, the sole **110** is configured as a full sole, extending continuously from the heel cap **147** to toe cap **120**. In another embodiment, the sole **110** may be configured as a split sole, wherein a first sole section is disposed within the heel portion **140** and a second sole section disposed within the forefoot portion **115** (i.e., no sole is positioned along the part of the shoe located under the arch of the foot).

[0021] The shoe **100** further includes a flexible/stretchable sling or liner permanently secured to the upper **105**. In the embodiment shown in FIG. 2, the sling **200** possesses a unitary structure including a foot receptacle **210** and a fastener assembly **220**. The foot receptacle **210** is configured to generally conform to the shape of the shoe cavity **315**. The foot receptacle **210** includes a bottom or base **225** and a side wall **230** extending upward from the base. The base **225**, which defines a generally horizontal surface in contact with the bottom of the foot, is substantially coextensive with the insole **305** of the sole **105**. The side wall **230** may be connected to the base **225** along a seam **235** (e.g., via stitching), and may be angularly or orthogonally oriented with respect to the base **225**. With this configuration, the foot receptacle **210** is configured to be generally coextensive with the cavity **315** of the shoe **100**, further defines a sling cavity **240** (FIG. 3) that receives the foot of a wearer.

[0022] The sling **200** may further include an exterior flap **245** extending from the rim **247** of the receptacle **210**. The flap **245** extends downward from the perimeter of the receptacle **210** such that it overlaps the receptacle's upper portion. With this configuration, the flap **245** generally defines a pocket **249** configured to receive and capture an elastic member or band **560** (FIG. 5C). The elastic member is coupled to

the collar **155** of the sole **105** to provide a resilient opening that partially closes on the foot, helping to secure to shoe **100** thereto. In operation, the band **560** is positioned within the pocket **249**. The flap **245** is secured to the receptacle **210**, which, in turn, is secured to the upper **105** along a line falling just below the collar **155**.

[0023] The fastener assembly **220** is configured to wrap around the leg/ankle of the wearer. The fastener includes a central web **250** configured to extend upward from collar **155** proximate the heel portion **140** of the upper **105** (e.g., being centrally aligned with the counter **150** (seen best in FIG. 6)). The central web **250** may further include a first lateral portion **252A** disposed along a first lateral side of the web and a second lateral portion **252B** disposed along a second lateral side of the web. With this configuration, the central web **250** and lateral portions **252A**, **252B** partially surround the rear portion of the opening **160** defined by collar **155** (being positioned along the heel cap **147**). The central web **250** may possess any shape and dimensions suitable for its described purpose. Preferably, the central web **250** is configured to cover at least a portion of the Achilles tendon of the wearer.

[0024] A first fastener member **255A** may extend from the first lateral portion **252A** of the central web **250**, while a second fastener member **255B** may extend from the second lateral portion **252B** of the central web. Each fastener member **255A**, **255B** extends distally from the central web **250** to define a distal portion **260A**, **260B** disposed a predetermined distance from the web. Each fastener member **255A**, **255B** may be configured to extend laterally from the central web **250** at an angle oriented generally orthogonal to the longitudinal axis of the shoe **100**. Alternatively, the fastener member **255A**, **255B** may extend from the central web **250** at other desired angles. Each fastener member **255A**, **255B** is configured to wrap around the lateral side of the leg/ankle and be fastened to each other along the side of the ankle/leg generally opposite to the central web **250**.

[0025] Referring to the embodiment shown in FIG. 3, the sling **200** may be secured to the upper **105** such the receptacle **210** is suspended and/or draped within the shoe cavity **315**. Specifically, the upper edge of the receptacle sidewall **230** is fixed to collar **155**, but the base **225** is permitted to move within the shoe cavity **315**. By way of example, the upper portion of the receptacle **210** may be secured to the collar **155** via stitching, adhesive, etc. With this configuration, only the upper portion or edge of the side wall **230** is secured about the circumference of the collar **155**, thereby

enabling the receptacle **210** to hang freely from the collar while remaining positioned within the shoe cavity **315**. Stated another way, the base **225** of the receptacle **210** is not permanently or temporarily secured to the sole **110** or the upper **105**; consequently, the base of the receptacle moves freely move relative to the sole **110** (e.g., along the surface of the insole **305**). With this configuration, the portion of the sling **200** that cradles the foot is adapted to move within the shoe cavity, while remaining securely coupled to the upper **105**.

[0026] In other embodiments, the sling **200** may be secured to the shoe **100** (i.e., to the upper **105** and/or the sole **110**) at other predetermined locations including, but not limited to, the forward point of the shoe (e.g., along the toe cap **120**).

[0027] As best seen in FIG. 3, the uppermost portion **265** of the receptacle side wall **230** may be further configured extend slightly above the collar **155** of the upper **105** to provide additionally comfort to the wearer (to prevent chafing of the collar **105** against the foot).

[0028] The materials forming the shoe **100** are not particularly limited, and include natural and synthetic materials. By way of example, the upper **105** may be formed of flexible material such as leather such (e.g., patent leather or suede). The sling **200** may be formed of soft, elastic (stretchable) material such as LYCRA. The sole **110** may be formed from generally rigid and/or durable materials such as rubber or wood.

[0029] The method of forming the shoe **100** is now explained with reference to FIGS. 4 and 5A – 5C. At Step **410**, the upper **105** is formed. Referring to FIG. 5A, the upper **105** may include a first segment of material **500A** and a second segment of material **500B**. Each material segment **500A**, **500B** possesses an interior surface **505** (i.e., a surface that faces the interior of the shoe **100**) and an exterior surface **510** (i.e., a surface that faces outward). The first material segment **500A** may be a generally arcuate segment including a first or forward transverse side **515A**, a second or rearward transverse side **515B**, a first or sole-facing longitudinal side **520A**, and a second or collar-forming longitudinal side **520B**. The portion of the first segment **500A** including the first transverse edge **515A** may be a hooked end **522** that defines a generally J-shaped structure.

[0030] The second material segment **500B** may include a third or forward transverse end **525A**, a fourth or rearward transverse end **525B**, a third or sole-facing longitudinal side **530A**, and a fourth or collar-forming longitudinal side **530B**.

[0031] To form the upper, the transverse ends **515A**, **515B**, **525A**, **525B** of the material segments **500A**, **500B** may be connected together by scribing or skiving complementary portions of the interior-facing **505** or exterior-facing **510** surfaces and securing the scribed edges together utilizing an adhesive and/or stitching. In one embodiment, the interior surface **505** of the first material segment **500A** is scribed along its first transverse side **515A**. Similarly, the exterior surface **510** of the second material segment **500B** is scribed along the third transverse side **520A**. This creates an inverse joint **532** having a size of, e.g., about 5 – 6 mm. The first **515A** and third **525A** transverse sides are then sealed together utilizing an adhesive (e.g., a hot melt polyurethane adhesive). In addition, the second **515B** and fourth **525B** transverse sides may be connected along seam **532** to form the heel portion **140** of the upper **105**, defining the central counter position. Once sealed, the upper **105** may be generally in the form of an oval having a top or collar edge **540** and a bottom or sole edge **545** is formed.

[0032] At Step **420**, the collar **155** may be formed. By way of example, the collar edge of the upper **105** may be folded along fold lines **550** to form a folded over band or cuff.

[0033] At Step **430**, the sling **200** is formed. By way of example a piece of stretchable material may be configured into the base **225**, side wall **230**, and fastener assembly **215** portions (e.g. by cutting a single piece of fabric or cutting multiple pieces of fabric together via stitching, etc.). The sling **200** may then be secured to the collar **105** of the upper at Step **440**. Specifically, the outer surface of the exterior flap **245** extending from the rim of the receptacle **210** is secured to the interior surface **505** of the upper **105**, and the receptacle is positioned within the upper. Optionally, the elastic band **560** may be inserted into the pocket **249** formed between the downward flap **245** and the receptacle exterior wall at Step **450**. The pocket **249** may be sealed shut in a manner that secures the sling **200** to the upper **105** (e.g., by stitching) as described above. The elastic band **560** assists in stabilizing the shoe **100** on the foot, more securely connecting it to the foot of the wearer.

[0034] At step 460, the sole 110 is secured to the bottom edge 545 of the upper 105 utilizing conventional techniques (e.g., via stitching, adhesive, etc.) to form the joint 165. Once formed, the upper 105 is positioned above the sole 110, defining one or more of the toe cap, throat, vamp, quarter, heel cap portions of the shoe 100 as described above.

[0035] In one embodiment, reinforcement material may be added to selected portions of the interior surface 505 of the upper 105. For example, reinforcing material (e.g., fabric such as canvas) may be secured to the interior surface 505 of the toe cap 120 of the upper 105 utilizing adhesive. In addition, reinforcing material may be secured to the interior side of the heel (to form the counter), e.g., by sewing and/or adhesive, and then optionally hammered until smooth. Reinforcement material may also be connected to the bottom edge 545 of the upper 105 (e.g., via adhesive and stitching).

[0036] Referring to FIG. 6, in operation, a user inserts a foot 600 into the shoe 100, through the opening 160 defined by the collar 155 and into the sling cavity 240. As the foot is positioned within the shoe, the foot receptacle 210 of the sling stretches and conforms to the foot 600, providing a customized fit to the wearer. In addition, the upper portion of the receptacle 210 remains fixed to the collar 155 while the base 225 moves freely with the user's foot.

[0037] Once the foot is inserted into the shoe, fastener assembly 220 is secured to the ankle/leg. Specifically, the central web 250 is positioned such that it covers the Achilles tendon of the foot. The first fastener member 255A is wrapped around one side of the ankle/leg, while the second fastener member 255B is wrapped around the other side of the ankle/leg. The distal portions 260A, 260B of the fasteners 255A, 255B are then secured to each other (e.g., mechanically secured by tying), being fastened along the front of the leg/ankle, generally opposite the central web position. Securing the fastening members further helps to secure the shoe 100 to the foot 600.

[0038] The above-described method provides a shoe having an internal, integrated sling or lining member with increased comfort characteristics. The sling not only provides additional comfort for the wearer, reducing friction between the foot and the interior surface of the shoe upper and sole, but also stabilizes the shoe on the foot. The sling permits the wearer to completely flex the foot in all required directions

while securing the shoe tightly to the foot. The sling is easy to secure, and flexes to accommodate the movement of the foot.

[0039] While the present invention has been described in detail and with reference to specific embodiments thereof, it will be apparent to one skilled in the art that various changes and modifications can be made therein without departing from the spirit and scope thereof. For example, the materials forming the shoe **200** may include any suitable for its described purpose. The type of shoe **100** in which the sling **200** is integrated is not particularly limited. That is, the method may be utilized to form shoes other than the shoes illustrated. Referring to FIGS. 7 and 8, other embodiments of the shoe includes low-heeled **700** (FIG. 7) and high-heeled shoes **800** (FIG. 8).

[0040] In addition, the sling **200** may include only the receptacle **210** portion, with the fastener assembly **215** being omitted. Thus, the **200** sling would terminate along its upper rim. The sling **200** may be formed of a unitary piece of fabric, or may be formed of multiple pieces of fabric secured together. For example, the receptacle **210** and the fastener assembly **215** may be formed as separate components and combined via sewing, adhesive, etc. Similarly, individual components of each of the receptacle **210** (e.g., the base and side wall) and the fastener assembly **215** (e.g., the fastener members **255A**, **255B** and the central web **250**) may be formed as a unitary structure or may be individual units secure together.

[0041] Any number of segments of material pieces **500A**, **500B** may be utilized to form the upper **105**. While the illustrated embodiments show two segments of material, the upper **105** may be formed of a single segment of material.

[0042] Thus, it is intended that the present invention covers the modifications and variations of this invention provided they come within the scope of the appended claims and their equivalents. It is to be understood that terms such as “top”, “bottom”, “front”, “rear”, “side”, “height”, “length”, “width”, “upper”, “lower”, “interior”, “exterior”, and the like as may be used herein, merely describe points of reference and do not limit the present invention to any particular orientation or configuration.

I claim:

1. A shoe comprising:
 - an upper including:
 - a top portion defining a collar, and
 - a bottom portion defining a sole edge;
 - a sole coupled to bottom portion of the upper, the sole comprising an insole surface, wherein the sole and upper cooperate to define a shoe cavity operable to receive a foot; and
 - a flexible lining member comprising:
 - a base configured to be disposed over the sole;
 - a sidewall extending distally from the base, wherein the base and side wall cooperate to form a foot receptacle,wherein a distal portion of the side wall is coupled to the collar of the upper such that the lining member is movably suspended from the collar and positioned within the shoe cavity.
2. The shoe of claim 1, wherein the base of the lining member is freely movable along the insole surface while the sidewall is fixed to the upper top portion.
3. The shoe of claim 1, wherein the lining member is formed of stretchable material and is configured to conform to the foot received by the shoe cavity.
4. The shoe of claim 1, wherein the lining member includes:
 - a receptacle portion positioned within the shoe cavity; and
 - a fastener assembly extending outward from the collar of the upper, wherein the fastener assembly is configured to wrap around a leg of the wearer.

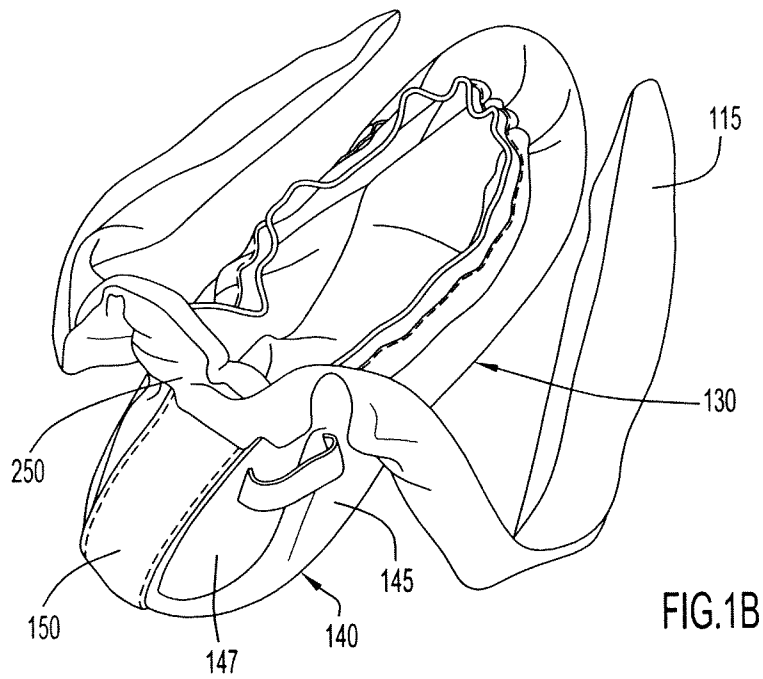
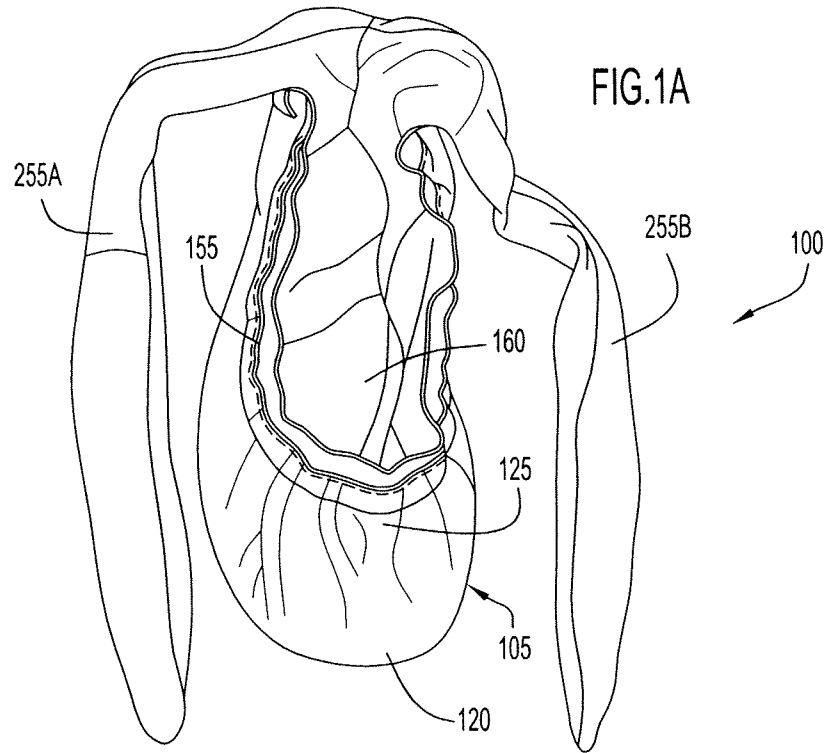
5. The shoe of claim 4, wherein the fastener assembly comprises:
 - a central web including a first lateral side and a second lateral side,
 - a first fastener member extending from the first lateral side of the central web;and
 - a second fastener member extending from the second lateral side of the web.
6. The shoe of claim 5, wherein the first and second fastener members are selectively securable to each other.
7. The shoe of claim 4, wherein:
 - the upper comprises heel portion including a counter generally disposed along a longitudinal axis of the shoe; and
 - the fastener assembly extends from the collar such that the ankle fastener is oriented above the counter of the sole.
8. A method of forming a shoe, the method comprising:
 - (a) forming an upper having a top portion including a top edge and a bottom portion including a bottom edge;
 - (b) securing a lining member to the top portion of the upper, wherein the lining member is configured to receive a foot, and
 - (c) securing a sole to the bottom portion of the upper to form a shoe, wherein the upper and sole cooperate to define a shoe cavity,
 - wherein the lining member is secured to the upper such that the lining member is movably suspended within the shoe cavity.
9. The method claim 8, wherein the lining member includes:
 - a foot receptacle disposed within the shoe cavity; and
 - a fastener formed integrally with the foot receptacle, wherein the fastener member extends distally from the top edge of the upper.

10. The method of claim 9, wherein the fastener comprises:
- a central web including a first lateral side and a second lateral side;
 - a first fastener member extending from the first lateral side of the central web;
- and
- a second fastener member extending from the second lateral side of the web.
11. The method of claim 8, wherein:
- the lining member comprises a base and a side wall extending distally from the base;
 - the distal portion of the side wall is secured to the top portion of the upper; and
 - the method further comprises (d) securing an elastic member to each of the top portion of the upper and the distal portion of the lining member.
12. The method of claim 8, wherein:
- the lining member comprises:
 - a base,
 - a side wall extending distally from the base,
 - a flap defining a pocket along a shoe-facing side of the lining member;
- and
- the method further comprises (d) positioning an elastic member within the pocket.
13. A method of connecting a shoe to a foot of a wearer, the method comprising:
- (a) obtaining a shoe comprising:
 - an upper having an top portion including a top edge and a bottom portion including a bottom edge, the top portion defining a collar of the shoe,
 - a sole coupled to the bottom portion of the shoe, wherein the sole and the upper cooperate to define a shoe cavity, and
 - a lining member secured to the shoe collar such that it is suspended within the shoe cavity; and
 - (b) inserting the foot into the shoe via the collar.

14. The method claim 13, wherein
the sole comprises an insole;
the lining member comprises a receptacle disposed within the shoe cavity, the receptacle including a base and a side wall extending distally from the base;
a distal portion of the side wall is secured to the top portion of the upper; and
the base freely moves over the insole.

15. The method of claim 14, wherein:
wherein the lining member further comprises a fastening member formed integrally with the receptacle;
the fastening member comprises:
a central web including a first lateral side and a second lateral side,
a first fastener member extending from the first lateral side of the central web, and
a second fastener member extending from the second lateral side of the web; and
the method further comprises:
(c) positioning the central web of the fastening member such that the central web is disposed over the Achilles tendon portion of the foot.

16. The method of claim 15 further comprising: (d) wrapping the first fastener and second fastener about ankle of the wearer and securing the first fastener to the second fastener.



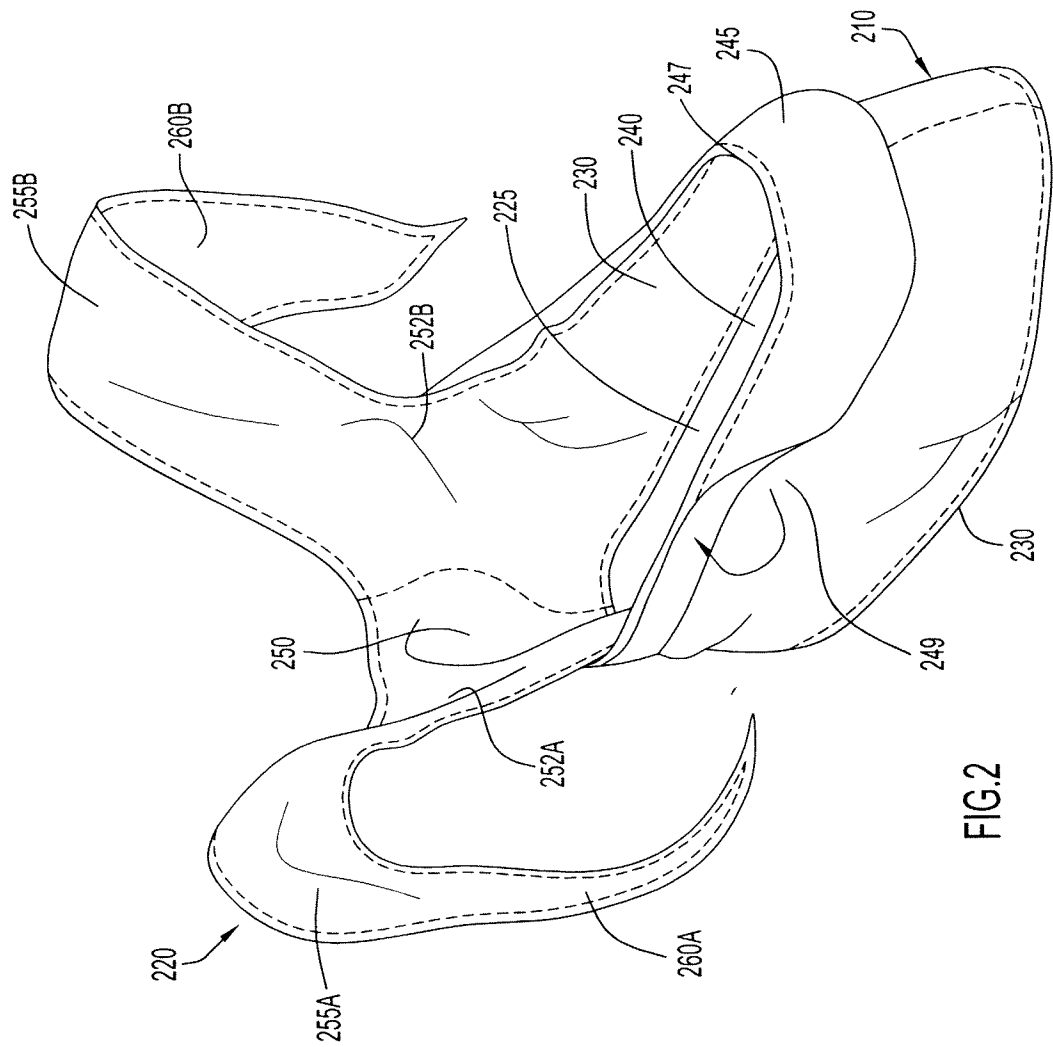


FIG. 2

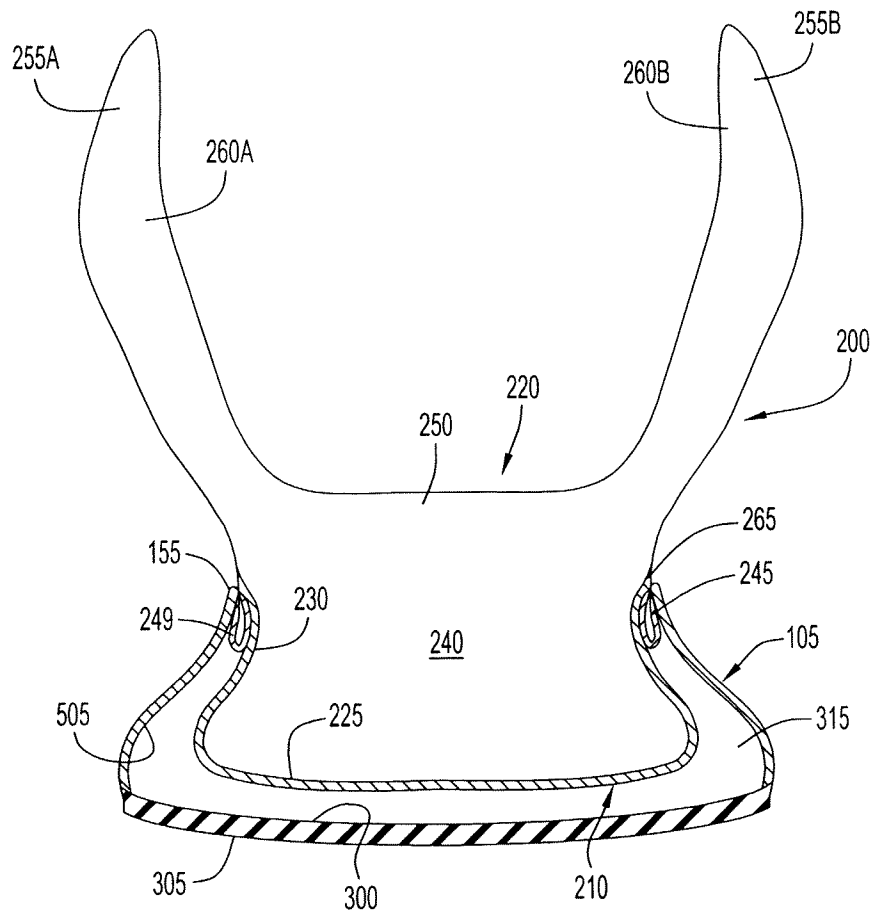


FIG.3

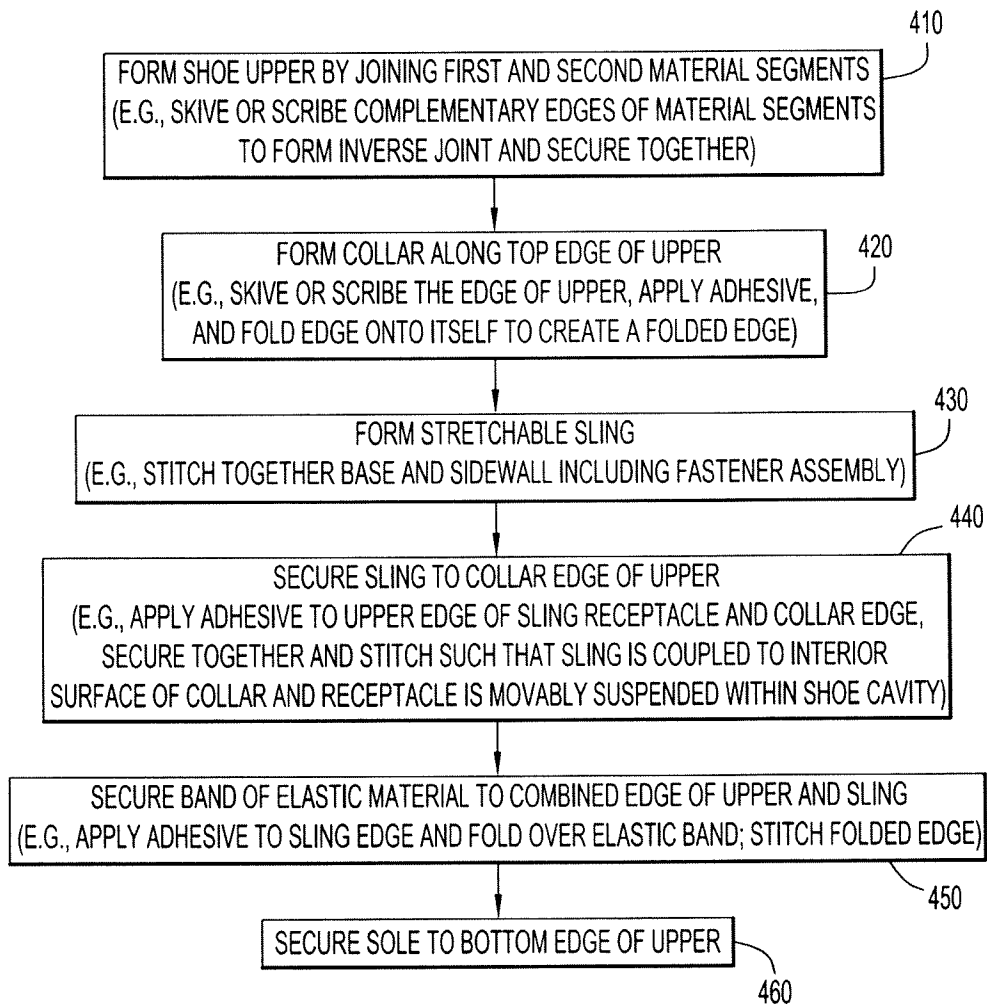


FIG.4

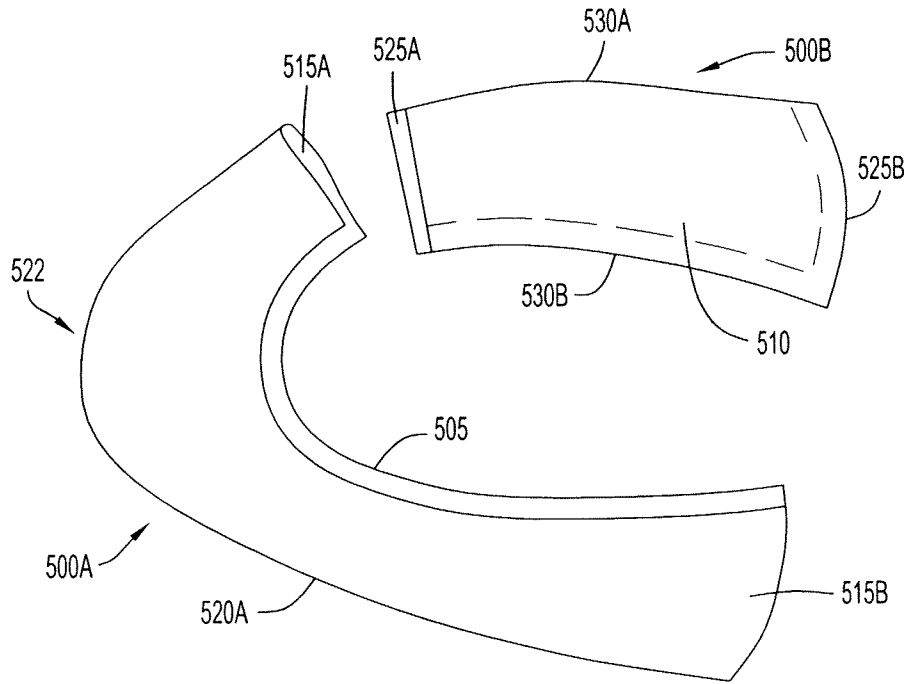


FIG. 5A

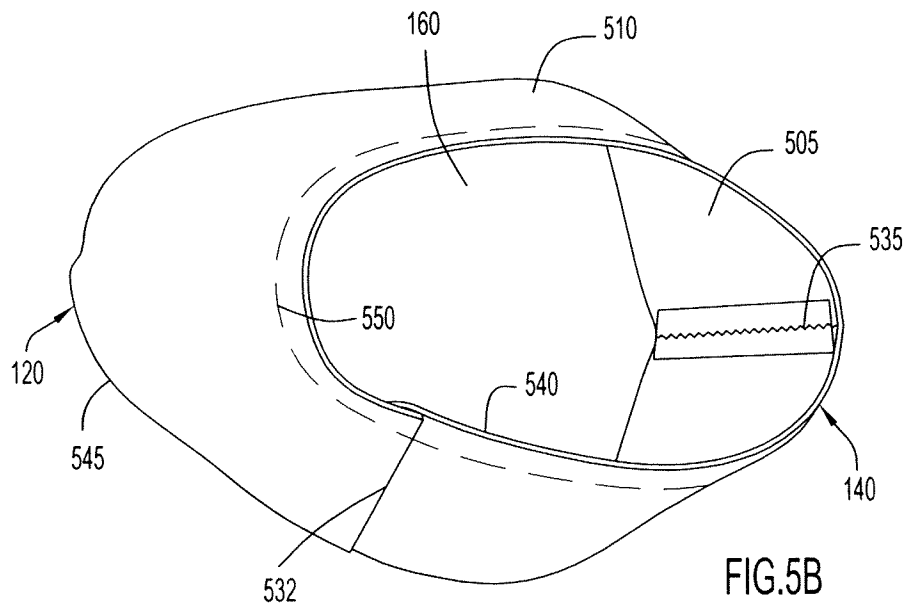
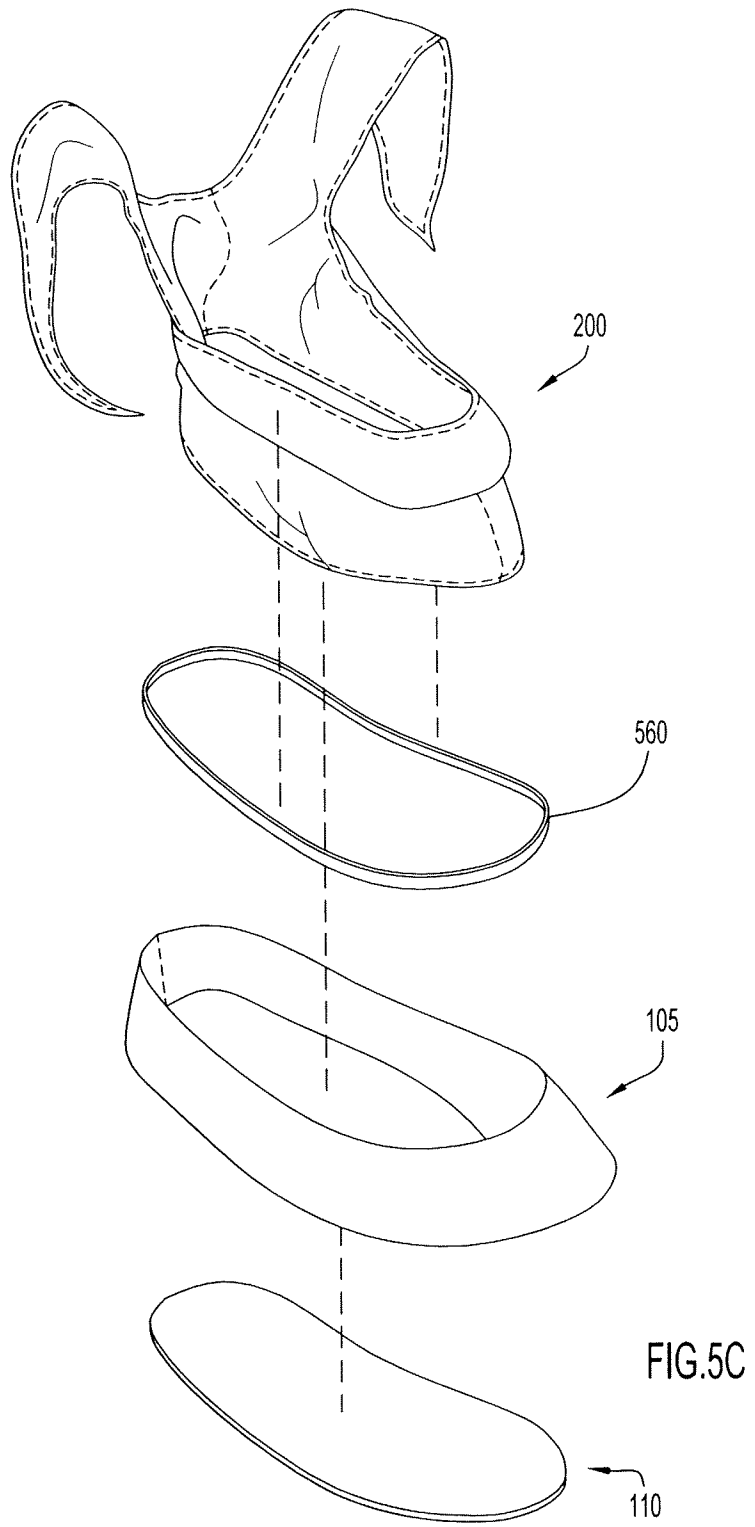


FIG. 5B



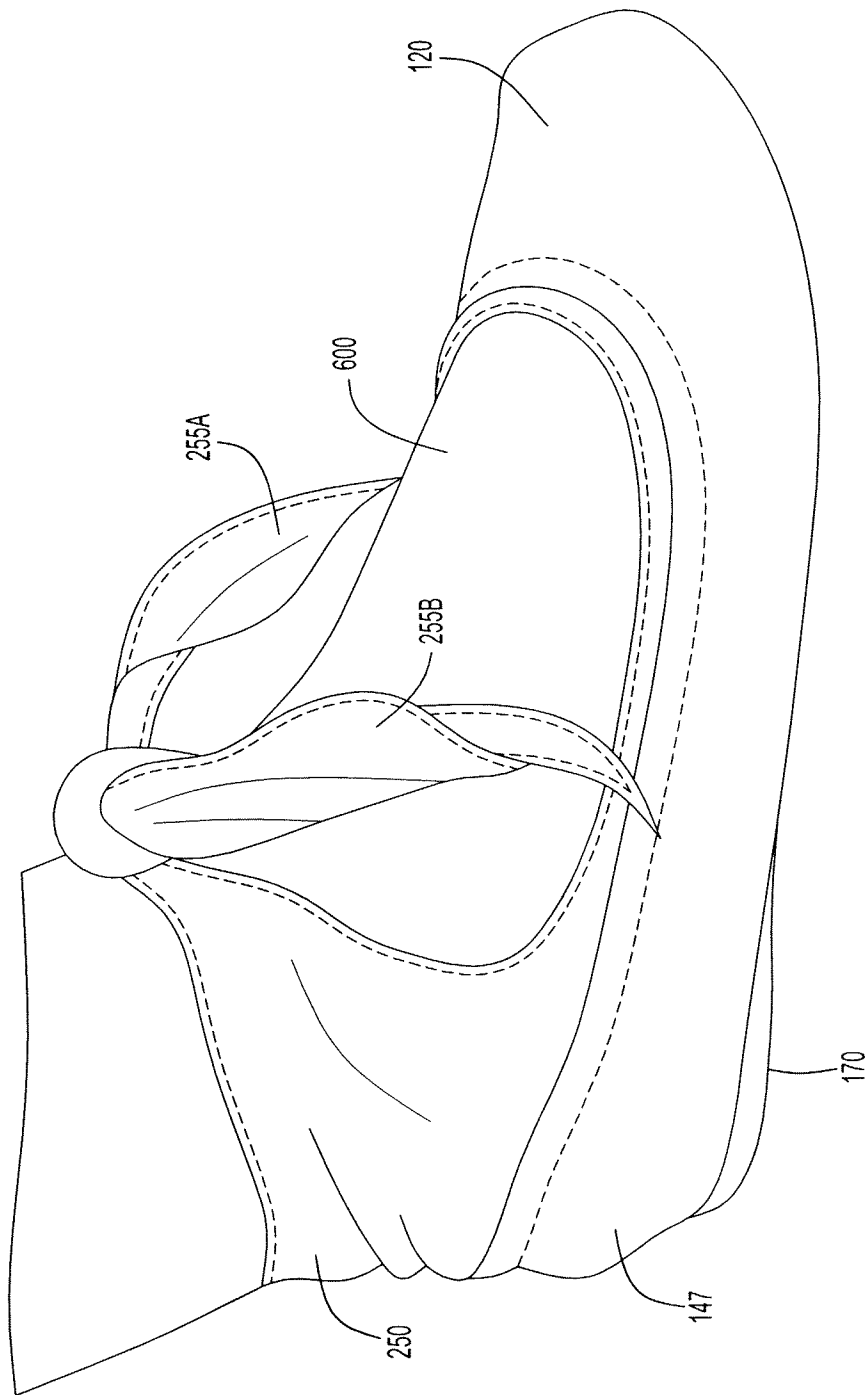


FIG.6

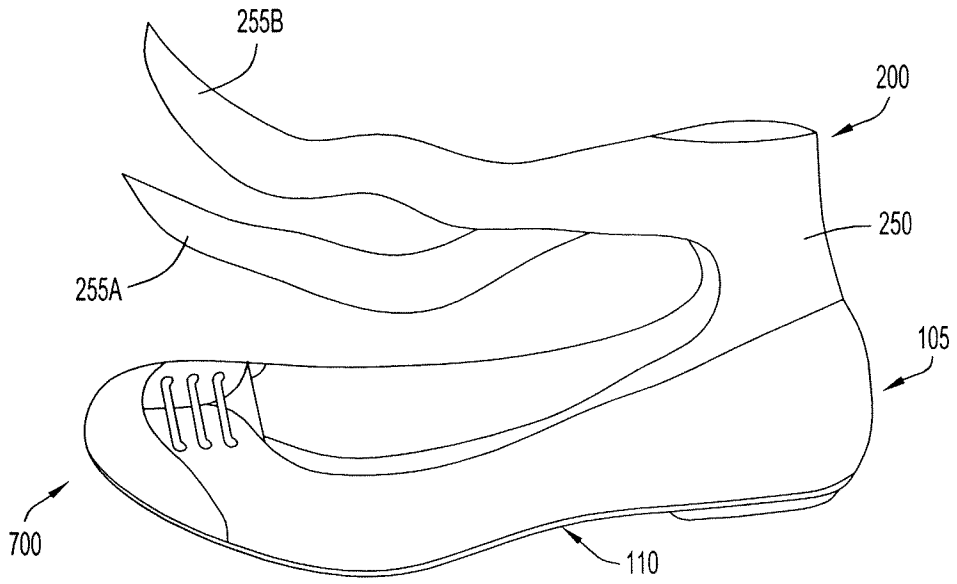


FIG. 7

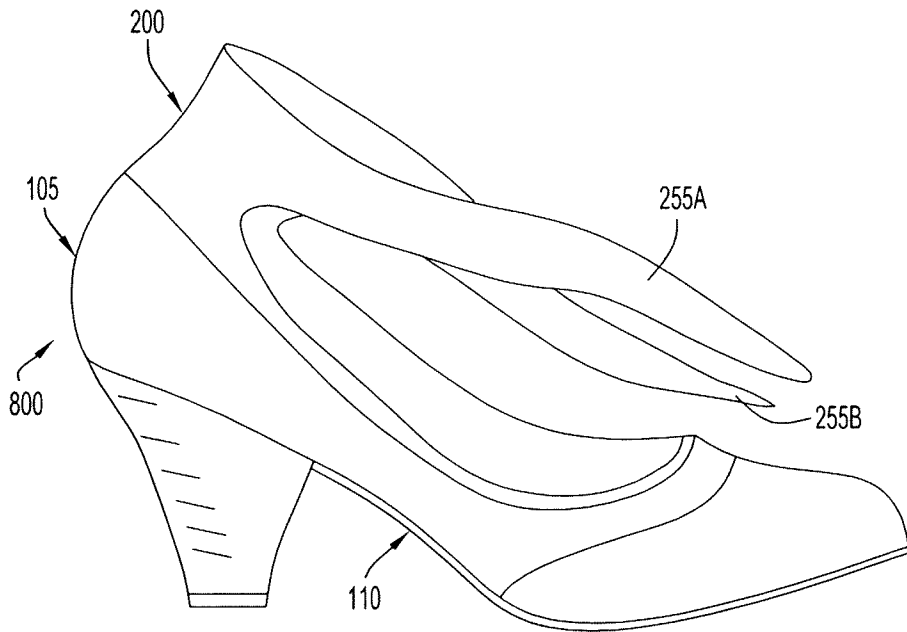


FIG. 8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/042343

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A43B 3/10 (2010.01)

USPC - 36/10

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC(8) - A43B 3/10 (2010.01)

USPC - 36/10, 15, 16, 43, 54, 55

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

MicroPatent, Google Patents

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---	US 7,370,438 B2 (VATTES et al) 13 May 2008 (13.05.2008) entire document	1-3, 8, 13-14
Y		----- 4-7, 9-12, 15-16
Y	US 7,334,354 B2 (FOXEN et al) 26 February 2008 (26.02.2008) entire document	4-7, 9-12, 15-16
Y	US 2006/0137223 A1 (ZICCARELLI) 29 June 2006 (29.06.2006) entire document	11-12
A	US 6,361,514 B1 (BROWN et al) 26 March 2002 (26.03.2002) entire document	1-16
A	US 6,202,324 B1 (WHITLOCK) 20 March 2001 (20.03.2001) entire document	1-16
A	US 3,601,909 A (AMENDOLA) 31 August 1971 (31.08.1971) entire document	1-16

 Further documents are listed in the continuation of Box C.

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Date of the actual completion of the international search

16 September 2010

Date of mailing of the international search report

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