US 20130152425A1

(19) United States

(12) Patent Application Publication

(10) Pub. No.: US 2013/0152425 A1

(43) Pub. Date: Jun. 20, 2013

BOREL

(54) **FOOTWEAR WITH IMPROVED TIGHTENING OF UPPER**

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(21) Appl. No.: **13/713,420**

(22) Filed: **Dec. 13, 2012**

(30) **Foreign Application Priority Data**

Dec. 15, 2011 (FR) 11/03842

Publication Classification

(51) **Int. Cl.**
A43C 11/00 (2006.01)

(52) **U.S. Cl.**
CPC *A43C 11/00* (2013.01)
USPC **36/83**

(57) **ABSTRACT**

An article of footwear, or shoe, including an outer sole assembly and an upper, the upper including a vamp extending lengthwise from a rear zone to a front zone, widthwise between a lateral portion and a medial portion, and heightwise from the outer sole assembly to an apex, the shoe including a first device for tightening a first subdivision of the vamp and a second device for tightening a second subdivision of the upper. For at least one of the first and second subdivisions, the tightening device includes a linkage extending from an anchoring point in relation to the upper to a blocking point in relation to the upper, the anchoring point being located in the area of the vamp, the blocking point being located in the area of the vamp.

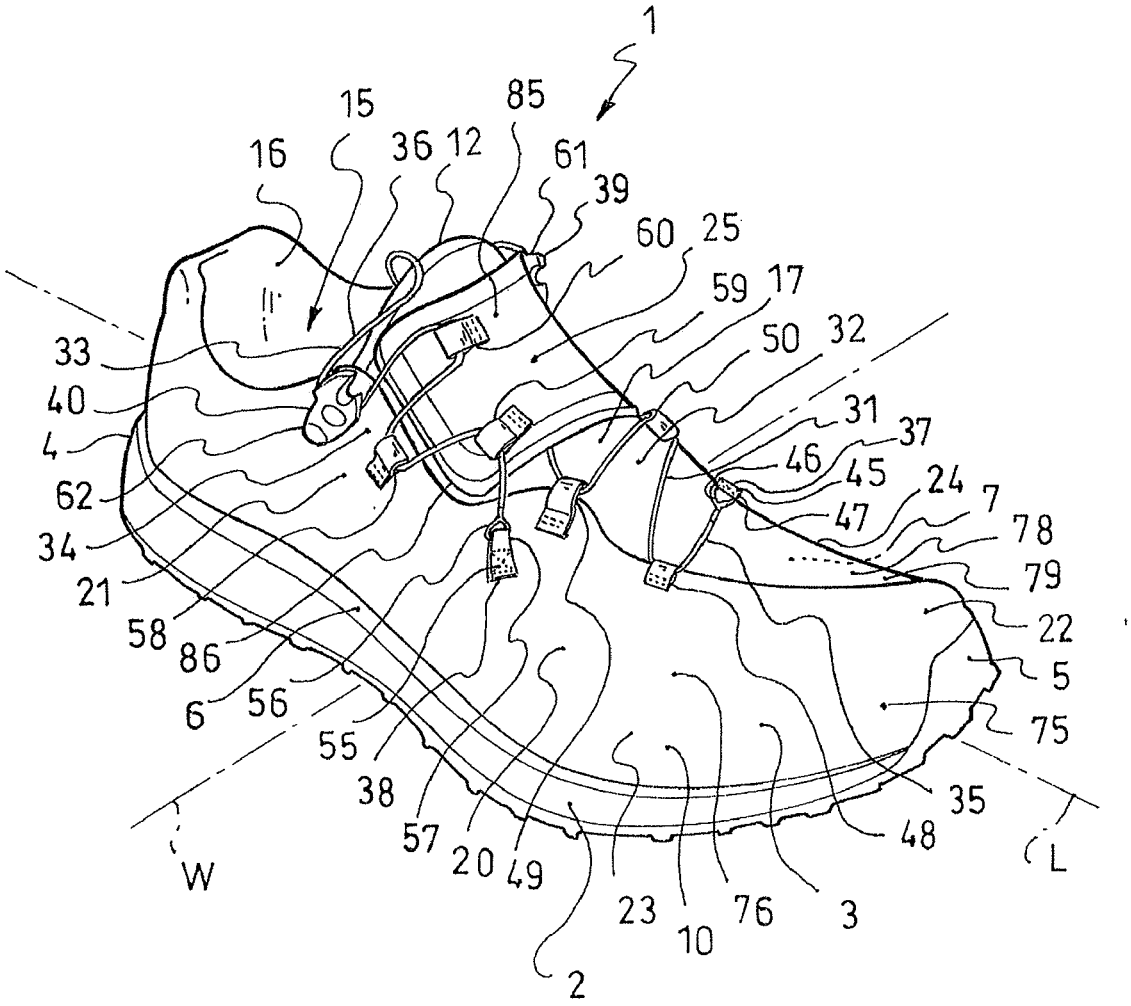

Fig. 1

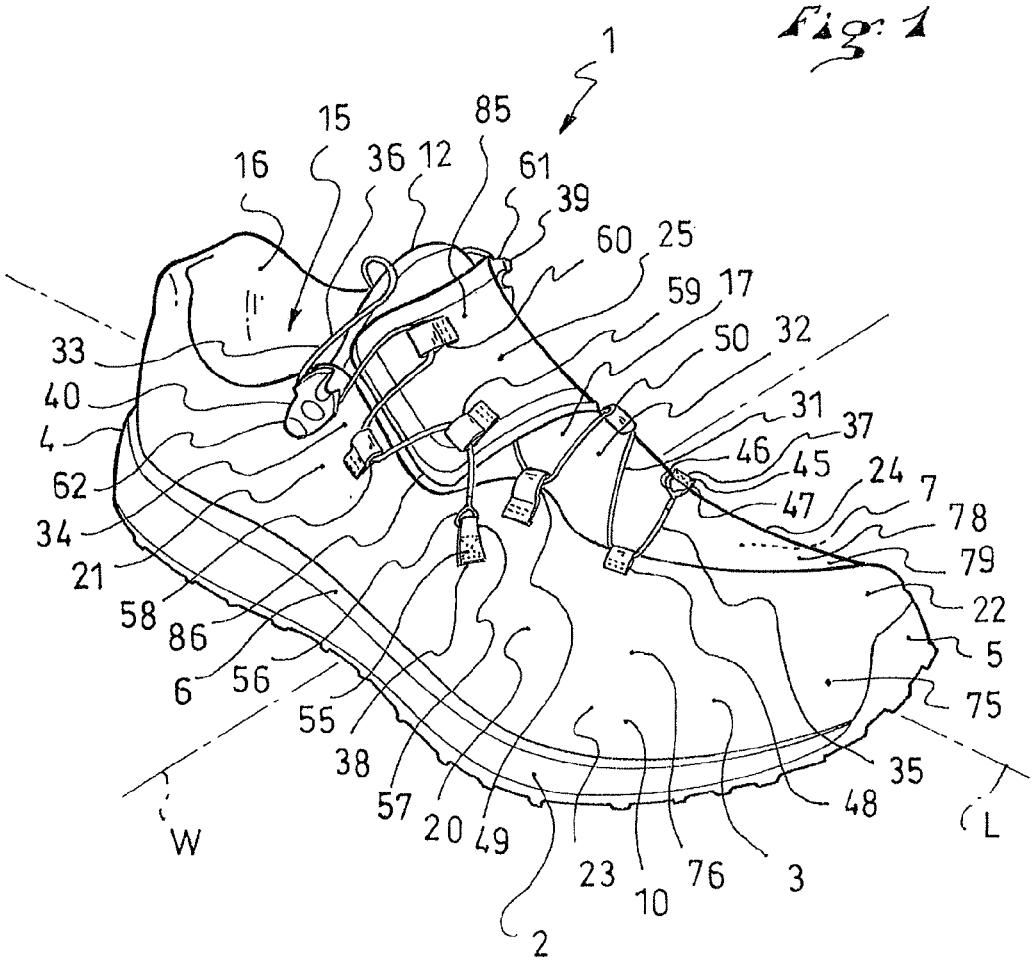
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Fig: 2

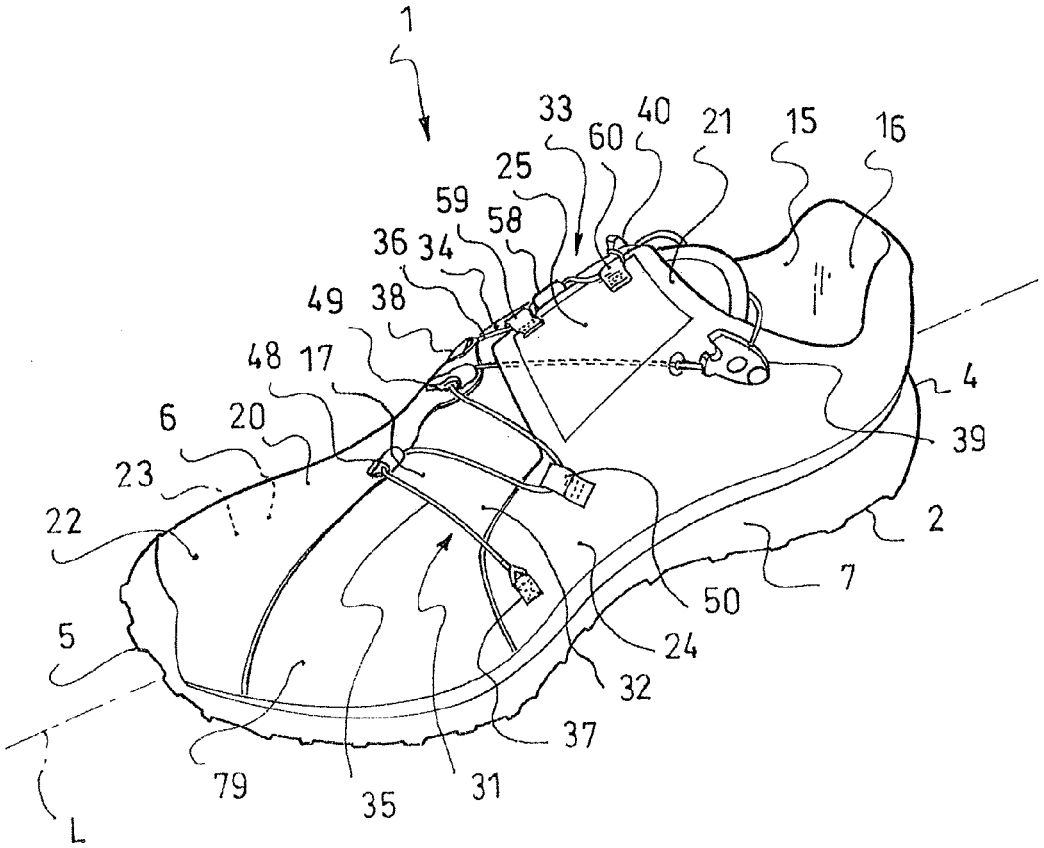
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Fig. 3

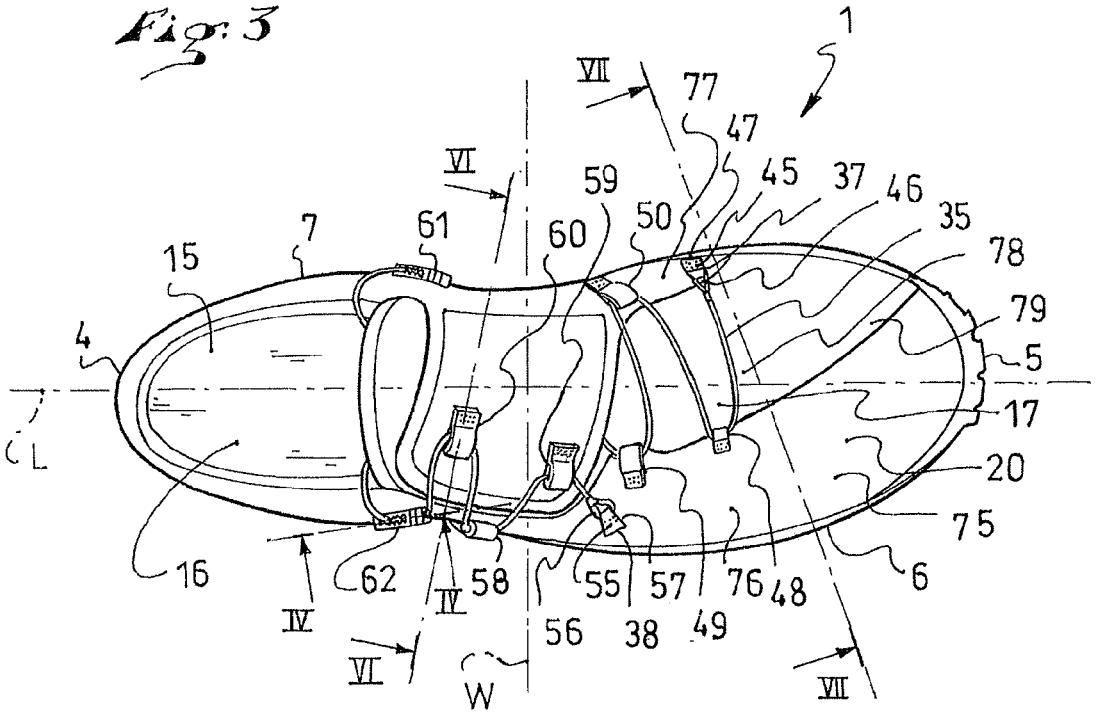
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Fig. 4

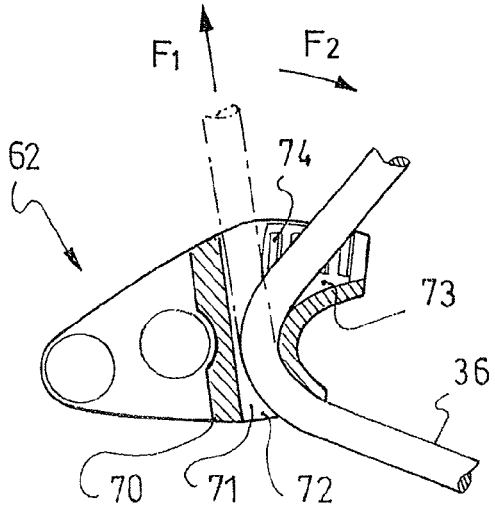
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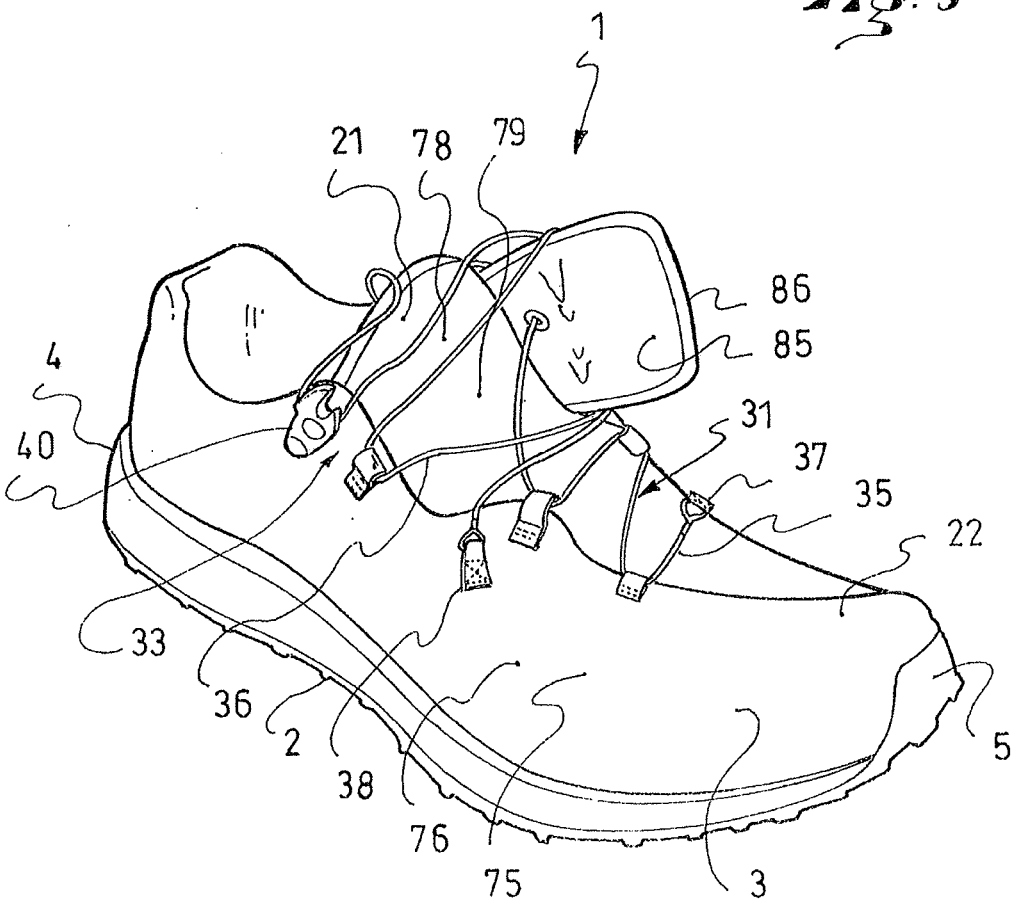
Fig. 5



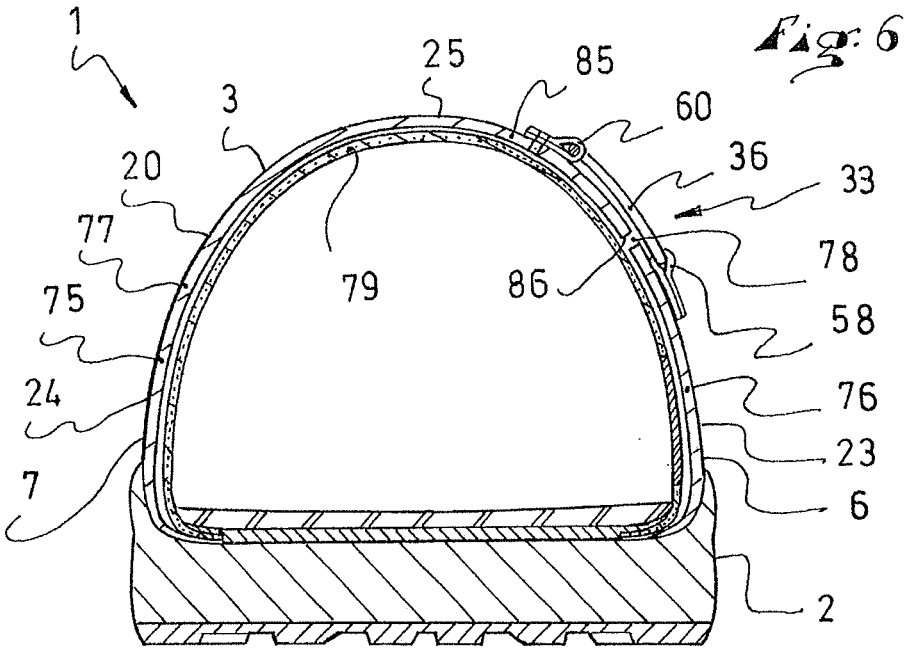

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Fig. 6

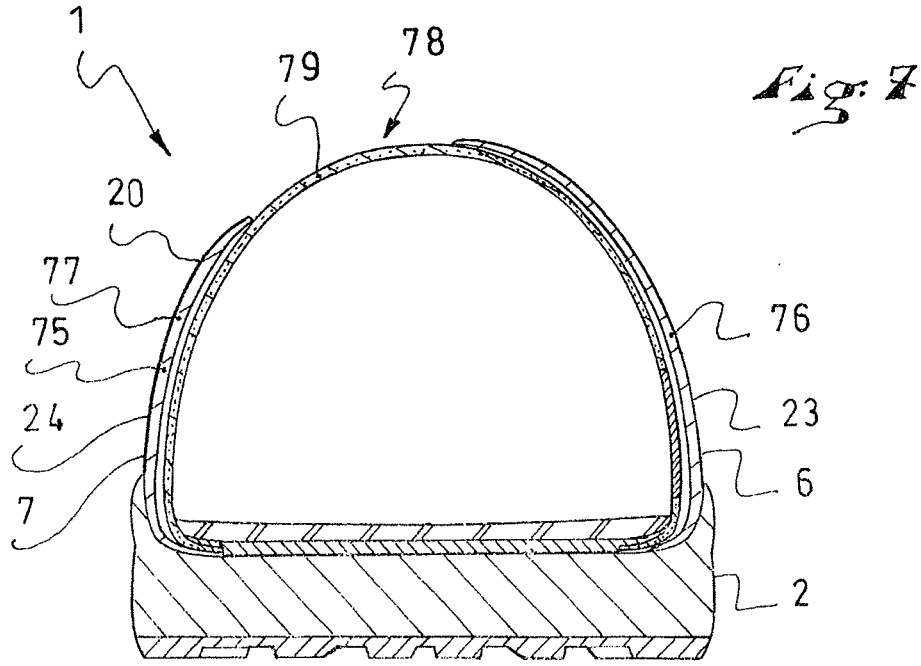
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Fig. 7

Fig. 8

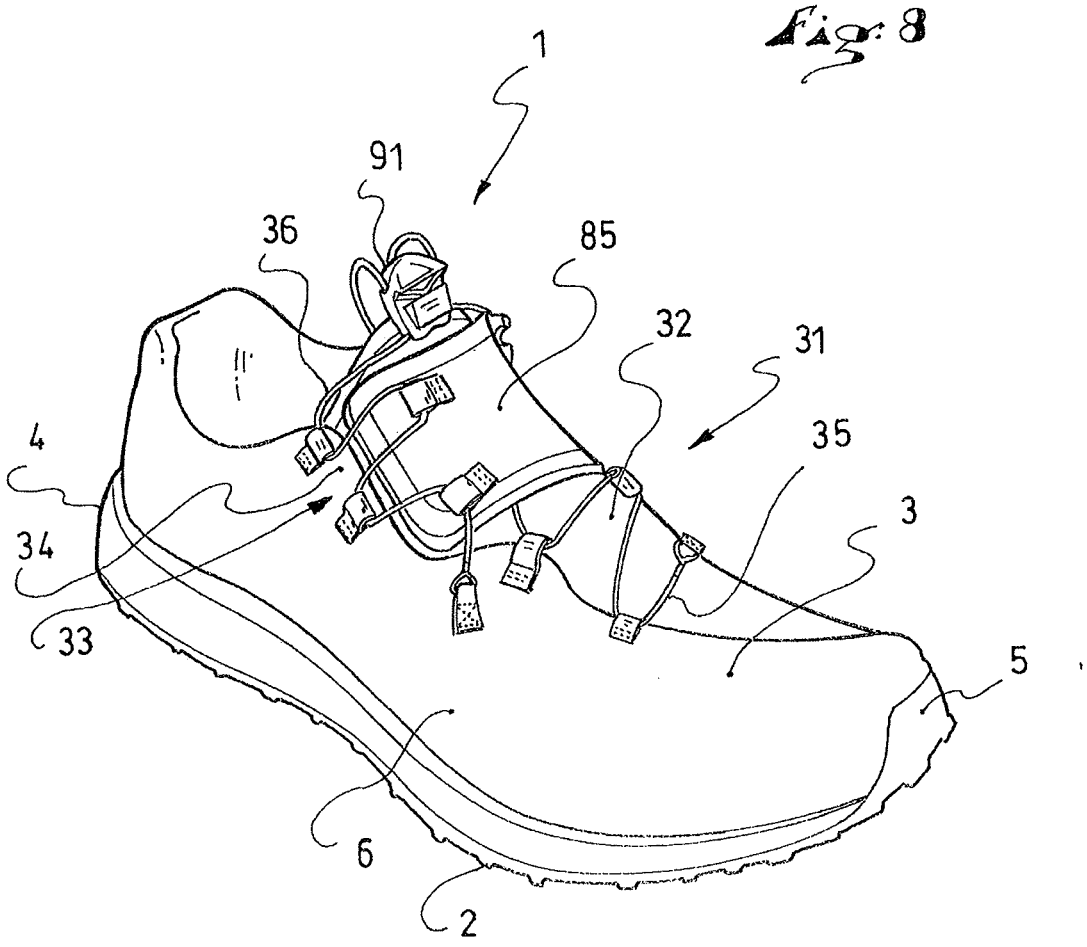

Fig: 9

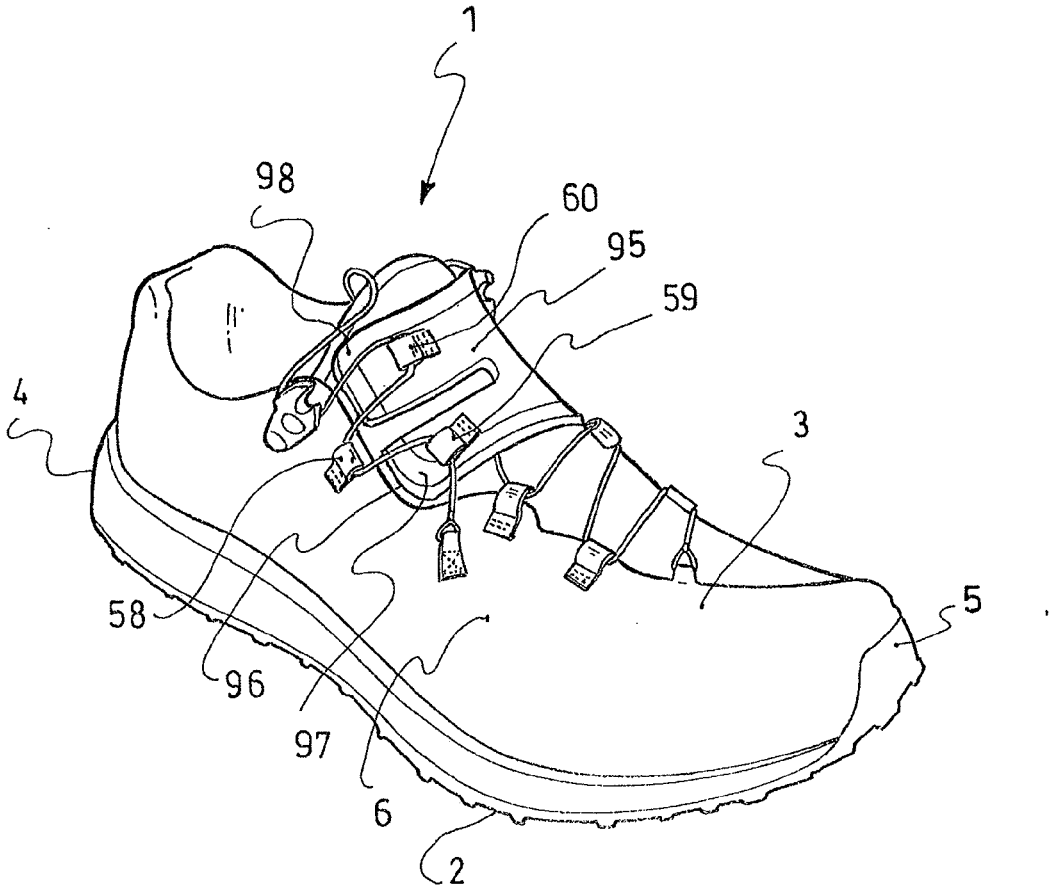

Fig. 10

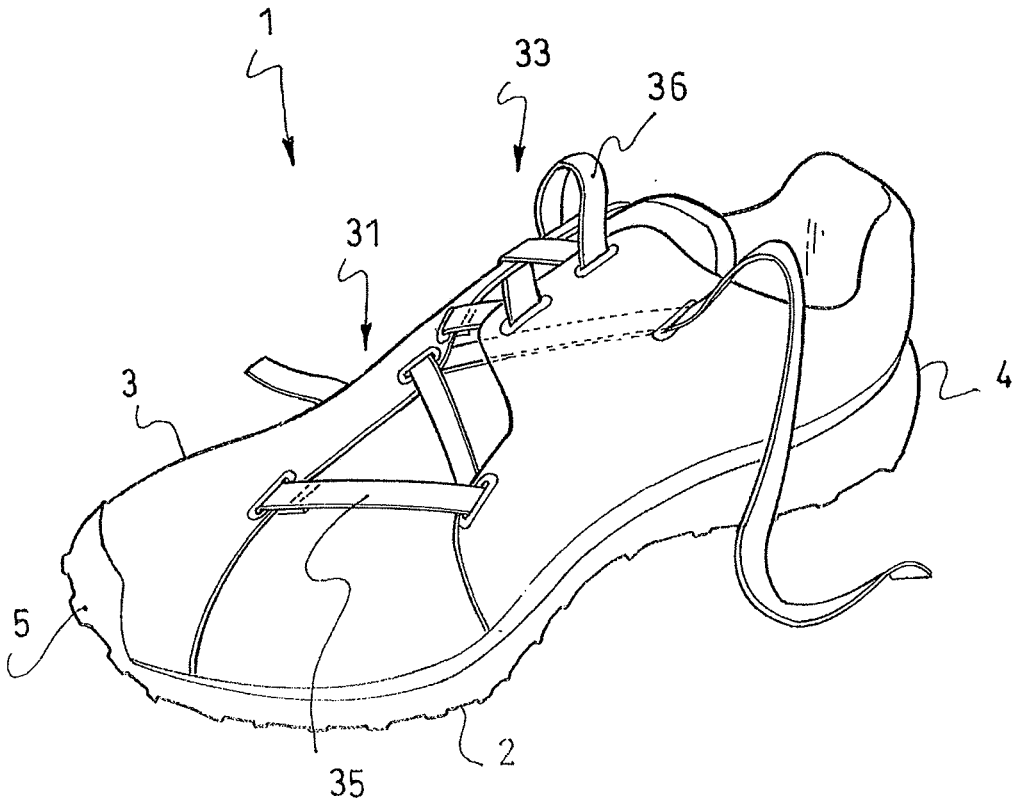

Fig: 11

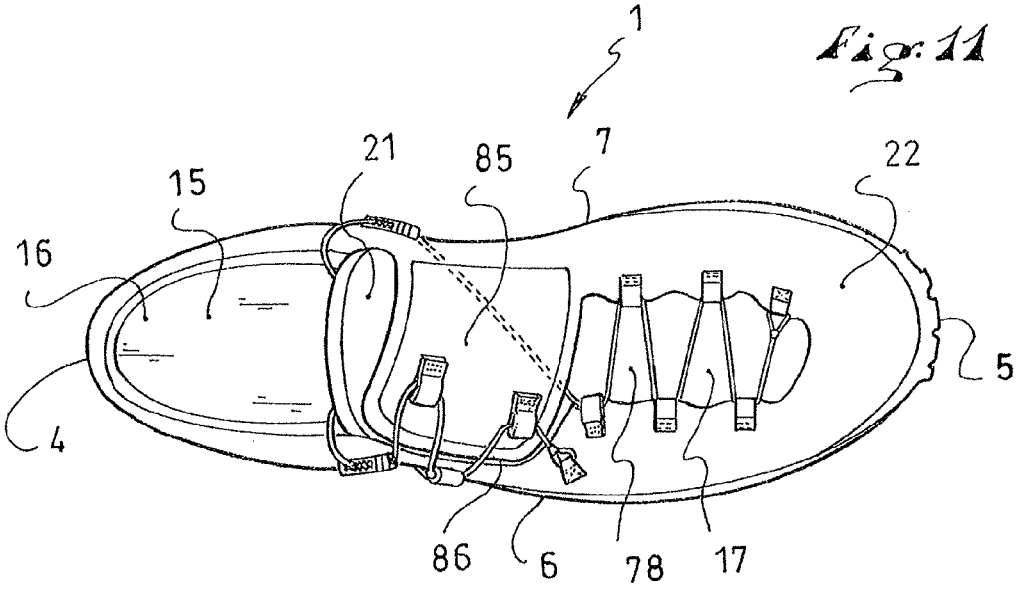

Fig: 12

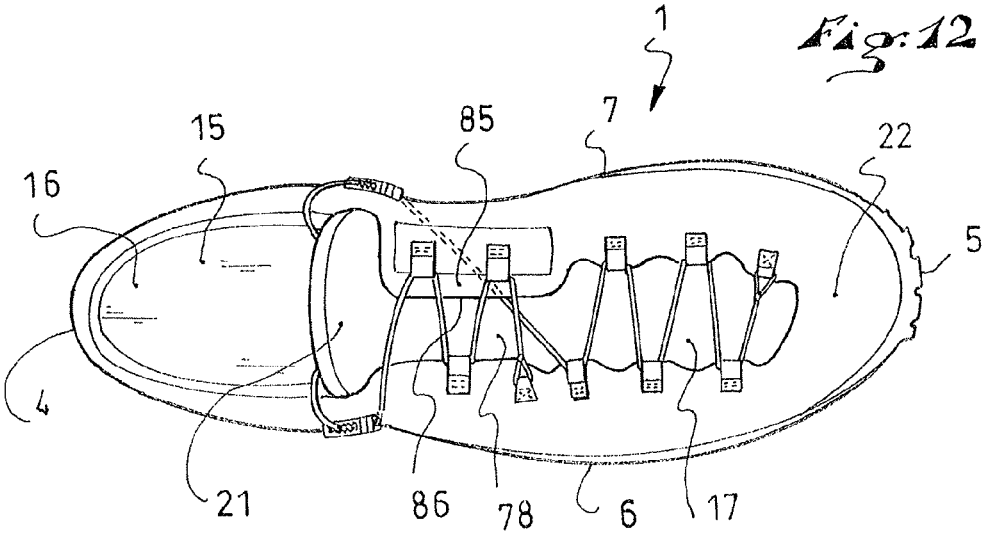

Fig. 13

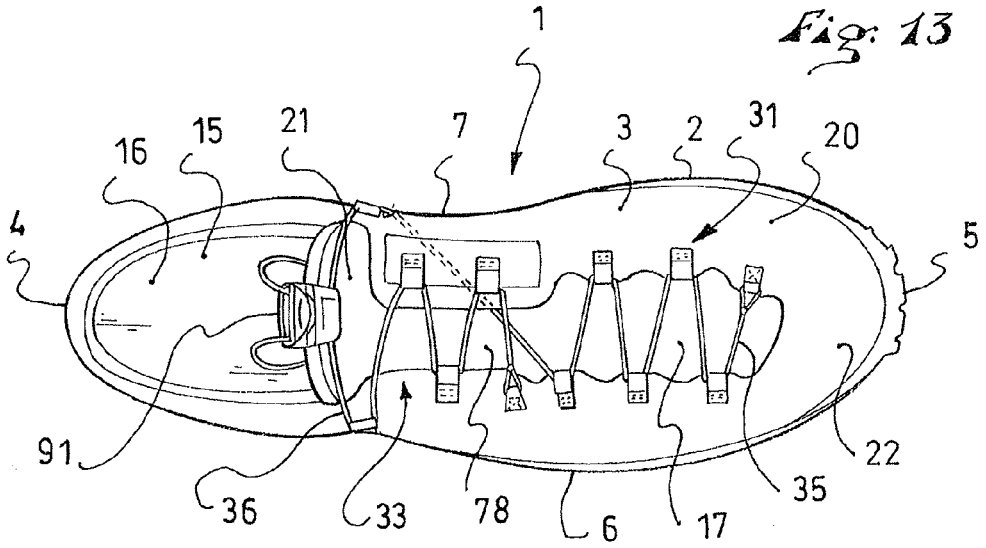
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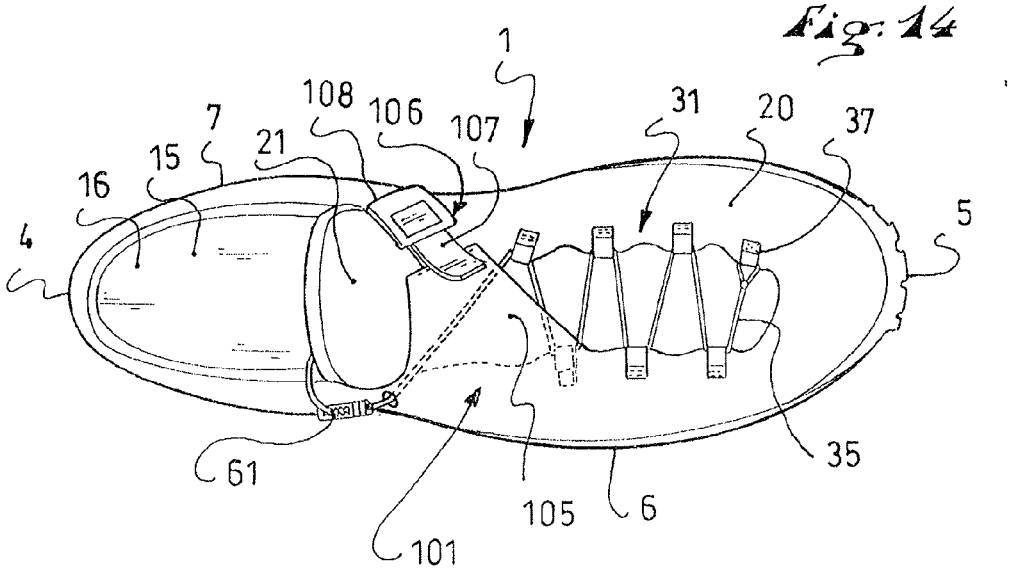
Fig. 14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FOOTWEAR WITH IMPROVED TIGHTENING OF UPPER

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is based upon French Patent Application No. 11/03842, filed Dec. 15, 2011, the disclosure of which is hereby incorporated by reference thereto in its entirety, and the priority of which is claimed under 35 U.S.C. §119.

BACKGROUND

[0002] 1. Field of the Invention

[0003] The invention relates to an article of footwear, especially a sports shoe, and relates more particularly to a shoe adapted for running, power walking, cycling, various types of sports, including ball sports and winter sports, as well as exercise and athletics.

[0004] An article of footwear of the aforementioned type can be used in fields such as walking or running on flat or mountainous terrain, tennis, basketball, cycling, skateboarding, roller skating, hiking, snowshoeing, snowboarding, skiing, and the like.

[0005] 2. Background Information

[0006] An article of footwear, referred to herein as a shoe, for convenience, can have a low upper, a high upper, or even a mid-upper. In any case, it is generally desirable for the foot of a wearer to be adequately supported. Indeed, good foot support in the upper results in a more effective use of the shoe.

[0007] For example, adequate support in a flexible shoe, such as that in a shoe used for running on flat or mountainous terrain, facilitates the transmission of sensory information and the rolling movement of the foot. By adequate support is meant, in particular, that the upper closely conforms to the shape of the foot, so as to avoid excessive tightening, or undesired loosening. Thus, a device for tightening the upper is adapted to support the user's foot, especially in the area of the vamp.

[0008] Conventionally, a tightening device includes a linkage, such as a lace, on the one hand, and connections for the lace to the upper. These connections are defined in the area of the vamp by keepers or guides that are associated with lateral and medial portions, or quarters, of the upper. The lace follows a path along which it typically runs alternately from one quarter to the other. Thus, it suffices to pull on the lace to bring the quarters in a direction toward one another to tighten the vamp of the upper. Thereafter, blocking the lace, such as by means of a tied knot, keeps the vamp tightened.

[0009] Although a tightening device comprised of a lace and keepers effectively tightens the vamp of a shoe, it is not entirely satisfactory. Indeed, it is sometimes observed that the upper does not closely conform to the shape of the foot in the area of the vamp. Some subdivisions of the upper are overly tightened, while other subdivisions of the upper are not sufficiently tightened. Moreover, the tightening or loosening of a subdivision can vary while the shoe is being worn.

[0010] For overcoming the aforementioned drawbacks, shoes have been proposed having a plurality of tightening devices in the area of the vamp.

[0011] For example, the patent document GB 1 262 218 discloses a shoe having a first device for tightening a first subdivision of the vamp, and a second device for tightening a second subdivision of the vamp. For each tightening device, the lace has two free ends arranged at the same end of the subdivision. The portion of the lace maintaining the tightening extends into the subdivision, from the aforementioned end, by running through the keepers. It suffices to pull on the two free ends of the lace, and then to tie them together in order to tighten the respective subdivision. According to the document GB 1 262 218, the use of a plurality of tightening devices enables the vamp to be tightened more evenly. However, the result obtained is not yet optimal.

[0012] Indeed, tightening sometimes is not uniform within a subdivision of the vamp. Some zones of the subdivision may be too tight, while other zones may be too loose. The distribution of the tightening force of a subdivision may also vary during use, i.e., while the shoe is worn. For example, when tightening the shoe, the user ties a knot when the lace appears to be sufficiently tensioned. However, the tension is not evenly distributed in the subdivision. Thus, during use, after a more even distribution of the tension, resulting from the bending or flexing of the shoe, the perceived tightening force decreases, thereby making it necessary to tighten the vamp once again.

[0013] It can be said of a prior art shoe, generally speaking, the vamp of an upper having a flexible lower portion does not conform closely enough to the shape of the foot. Consequently, there remain areas of the vamp in which tightening is either excessive or insufficient. It is further observed that the tightening or loosening of the vamp varies in certain areas during use.

[0014] It has also been observed that a shoe according to the prior art does not always offer sufficient comfort of use, or that it is not easy to adjust or manipulate, especially in terms of the actuation of the tightening devices and mechanisms.

[0015] Further, it has been observed that it is not always easy to put on or remove the shoe, that is to say, to insert or remove the foot in relation to the shoe.

SUMMARY

[0016] The invention improves the support of the foot in a flexible shoe, especially in the area of the vamp, thereby enabling the lower portion of the upper, which is adapted to cover the foot, to more closely conform to the shape of the foot. In other words, the invention ensures that the vamp is neither too tight nor too loose in any area of the vamp.

[0017] The invention also ensures that the tightening force is more constant during a period of use of the shoe.

[0018] Further, the invention enables faster actuation of a tightening device.

[0019] The invention also enables a shoe to be used more comfortably, whether in a static mode or in a dynamic mode. It is indeed advantageous for the shoe to transmit sensations to the user's foot, while at rest or in motion, such as those sensations generated when walking, running, cross-country skiing, or while engaged in similar activities. It is also advantageous to be able to easily manipulate the elements that enable or disable the tightening of the upper.

[0020] The invention also improves putting on and/or removing the shoe, in the sense that it is desirable to facilitate the passage of the foot when being inserted into or removed from the upper.

[0021] To this end, the invention is directed to a shoe having an outer sole assembly and an upper, the upper including a vamp extending lengthwise from a rear zone to a front zone, widthwise between a lateral portion and a medial portion, and heightwise from the outer sole assembly to an apex, the shoe

including a first device for tightening a first subdivision of the vamp, and a second device for tightening a second subdivision of the vamp.

[0022] According to the invention, for at least one of the first and second subdivisions, the tightening device includes a linkage extending from an anchoring point in relation to the upper to a blocking point in relation to the upper, the anchoring point being located in the area of the vamp, and the blocking point being located in the area of the vamp.

[0023] Due to the structure of the tightening device, the tension of the linkage or lace is uniform within the subdivision involved. In other words, the tension of the linkage is kept constant by the tightening device, from the anchoring point to the tightening point. As a result, the tightening of the upper, that is to say, the tightening of the upper in this case, is uniform within the respective subdivision of the vamp. In addition, the tightening of the subdivision is constant, or at least substantially constant, during the period of use of the shoe. The envelope of the upper, at least in the respective subdivision of the vamp, closely conforms to the shape of the foot.

[0024] The resulting advantages include improved foot support, especially in the area of the vamp. Each subdivision of the vamp more closely assumes the shape of the foot. The tightening force is nominal, i.e., neither too great nor too small, throughout the subdivision.

[0025] Another advantage is that the tightening force is more constant during the period of use of the shoe.

[0026] In addition, applying a tightening device is faster with the invention. Indeed, the required tightening force is applied to a single section of the linkage or lace, i.e., that which extends from the anchoring point to the blocking point.

[0027] Another advantage is increased comfort of the shoe, both in a static mode and in a dynamic mode. Indeed, the more efficient application of the vamp on the foot improves the receptions and transmissions of forces or sensory information, while avoiding injuries related to clearances between the foot and the upper, or to excessive pressure on the foot.

[0028] Moreover, the tightening device is easier to operate because it involves only one active linkage section.

[0029] An additional advantage is an improvement to the insertion and/or removal of the foot. Indeed, the tightening device according to the invention enables a quick operation, and promotes a large opening of the vamp of the upper upon loosening of the linkage.

BRIEF DESCRIPTION OF DRAWINGS

[0030] Other characteristics and advantages of the invention will be better understood from the description which follows, with reference to the annexed drawings illustrating, by way of non-limiting embodiments, how the invention can be embodied, and in which:

[0031] FIG. **1** is a perspective front view, on the lateral side of a shoe according to a first embodiment of the invention, with the upper being tightened;

[0032] FIG. **2** is a perspective front view, on the medial side of the shoe of FIG. **1**;

[0033] FIG. **3** is a top view of the shoe of FIGS. **1** and **2**;

[0034] FIG. **4** is a cross section along the line IV-IV of FIG. **3**;

[0035] FIG. **5** is similar to FIG. **1**, with the upper being untightened;

[0036] FIG. **6** is a cross section along the line VI-VI of FIG. **3**;

[0037] FIG. **7** is a cross section along the line VII-VII of FIG. **3**;

[0038] FIG. **8** is a perspective front view, on the lateral side, of a shoe according to a second embodiment of the invention, with the upper being tightened;

[0039] FIG. **9** is a perspective front view, on the lateral side of a shoe according to a third embodiment of the invention, with the upper being tightened;

[0040] FIG. **10** is a perspective front view, on the medial side of a shoe according to a fourth embodiment of the invention, with the upper being untightened;

[0041] FIG. **11** is a top view of a shoe according to a fifth embodiment of the invention;

[0042] FIG. **12** is a top view of a shoe according to a sixth embodiment of the invention;

[0043] FIG. **13** is a top view of a shoe according to a seventh embodiment of the invention; and

[0044] FIG. **14** is a top view of a shoe according to an eighth embodiment of the invention.

DETAILED DESCRIPTION

[0045] The first embodiment described below relates more particularly to a shoe intended for walking or running on flat or mountainous terrain. However, the invention is applicable to other fields such as those mentioned above.

[0046] The first embodiment is described below with reference to FIGS. **1-7**.

[0047] FIGS. **1-3** show a walking or running shoe provided to receive the foot of a user.

[0048] Conventionally, and in general, the shoe **1** includes an outer sole assembly **2** and an upper **3**. The shoe extends along a longitudinal direction L from a rear end, or heel **4**, to a front end, or tip **5**, and along a transverse direction W between a lateral side **6** and a medial side **7**.

[0049] As shown, the upper **3** includes a lower portion **10** provided to surround the foot, and does not have a top portion, i.e., a portion extending above the wearer's ankle. However, the upper could be provided to include a top portion. In any case, however, the shoe **1** is structured so as to enable proper bending of the leg or a good rolling movement of the foot, as well as the transmission of sensory information or steering forces. Therefore, the upper **3** is relatively flexible. The outer sole assembly can be relatively rigid, or it can be much more flexible.

[0050] According to the first illustrated embodiment, the shoe **1** extends heightwise from the outer bottom assembly **2** to an upper end **12**, that is to say, up to the free end of the lower portion **10** or of the upper **3**. The shoe **1** has a foot insertion opening **15**, which extends from the rear end **4** to the front end **5**. On the side of the rear end **4**, the opening **15** has a rear subdivision **16** adapted to allow the foot to pass through, and also to surround the ankle after the foot has been inserted. From the instep, starting at the rear subdivision **16** forward, the foot insertion opening **15** has a front subdivision **17** which makes it possible to vary the size of the opening and of the fitting volume. The rear **16** and front **17** subdivisions are co-extensive with one another. The specific characteristics of the front subdivision are further described below.

[0051] Still according to the first embodiment, the shoe **1** includes a vamp **20** extending lengthwise from a rear zone **21** to a front zone **22**, widthwise between a lateral portion **23** and a medial portion **24**, and heightwise from the outer sole assembly **2** to an apex **25**, the apex of the vamp merging with the upper end **12** of the upper **3**. The vamp **20** serves to cover,

completely or possibly only partially, that surface of the foot which extends from the instep or from the flexion crease to the toes. Therefore, the rear zone **21** of the vamp **20** is located in the area of the boundary between the rear subdivision **16** and the front subdivision **17** of the foot insertion opening **15**. The front zone **22** of the vamp **20** merges with the front end **5** of the upper **3**. In the same spirit, the lateral portion **23** of the vamp **20**, in the area in which it extends, demarcates the lateral edge **6**. Consequently, the medial portion **24** of the vamp **20**, in the area in which it extends, demarcates the medial side **7**.

[0052] To permit tightening the upper **3** reversibly, the shoe **1** comprises a first tightening device **31** for tightening a first subdivision **32** of the vamp **20**, and a second tightening device **33** for tightening a second subdivision **34** of the vamp. As further explained below, each tightening device **31**, **33** is constructed and arranged to reversibly reduce the size of the opening **15**.

[0053] According to the invention, for at least one of the first **32** and second **34** subdivisions, the respective tightening device **31**, **33** includes a linkage **35**, **36** extending from an anchoring point **37**, **38** in relation to the upper **3** to a blocking point **39**, **40** in relation to the upper, the anchoring point **37**, **38** being located in the area of the vamp **20**, and the blocking point **39**, **40** being located in the area of the vamp.

[0054] Because of the structure of the tightening devices, the tension of the each linkage is uniform within in a respective subdivision. The tension of the linkage **35**, **36** is kept uniform by the tightening device, from the anchoring point to the tightening point. Therefore, the tightening of the vamp **20**, and also of the upper **3**, is uniform within the respective subdivisions **32**, **33**.

[0055] According to the first embodiment of the invention, and without being limiting, the first device **31** for tightening the first subdivision **32** includes a first linkage **35** extending from a first anchoring point **37** in relation to the upper **3** to a first blocking point **39** in relation to the upper, the first anchoring point **37** being located in the area of the vamp **20**, the first blocking point **39** being located in the area of the vamp. Similarly, the second device **33** for tightening the second subdivision **34** includes a second linkage **36** extending from a second anchoring point **38** in relation to the upper **3** to a second blocking point **40** in relation to the upper, the second anchoring point **38** being located in the area of the vamp **20**, the second blocking point **40** being located in the area of the vamp. In the end, two subdivisions **31**, **32** of the vamp are provided with good tightening uniformity.

[0056] According to the first embodiment, and in a non-limiting fashion, the first tightening device **31** extends from the rear zone **21** of the vamp **20** to the front zone **22**, along a distance ranging between 40% and 90% of the length of the vamp. A distance between 60 and 80% of the length of the vamp enables the metatarsal zone of the foot to be tightened evenly. This is very useful for the transmission of forces and sensory information during front support forces.

[0057] The first point **37** for anchoring the first linkage **35** of the first tightening device **31** to the upper **3** includes stitching **45**. In fact, the first linkage **35** is folded and sewn to form a loop **46** in the area of the anchoring point **37**. The loop is retained by an end keeper **47**, which is itself affixed to the vamp **20** by the aforementioned stitching **45**. This arrangement is simple and lightweight, and also preserves the flexibility of the vamp as the end keeper **47** is comprised of a folded strap portion. It is however possible to provide alternative structures for the first anchoring point **37**.

[0058] The first tightening device **31** has intermediate keepers **48**, **49**, **50** located on the lateral portion **23** and medial portion **24** of the vamp **20**. In this case, the first tightening device **31** comprises two lateral keepers **48**, **49** and a medial keeper **50**. The number of keepers may be different, either greater or smaller. However, a small number of keepers, between two and five, provides the first device **31** with high tightening effectiveness. As with keeper **47**, the intermediate keepers **48**, **49**, **50** are each comprised of a folded strap portion. The advantage, as stated above, is to preserve the lightness and flexibility of the vamp, or of the upper.

[0059] In a non-limiting fashion, the intermediate keepers **48**, **49**, **50** are arranged at a distance ranging between 40% and 60% of the length of the vamp. The distance of arrangement of the keepers **48**, **49**, **50** is measured from the rear zone **21**, and the length of the vamp is measured from the rear zone **21** to the front zone **22**. This arrangement enables a uniform tightening of the metatarsus of the foot and, consequently, an adequate support of the foot within the shoe.

[0060] The structure of the second tightening device **33** is based on that of the first tightening device **31**. Thus, the second tightening device **33** extends from the rear zone **21** of the vamp **20** to the front zone **22**, along a distance ranging between 15% and 60% of the length of the vamp. A distance between 15% and 40% of the length of the vamp allows for a uniform tightening of the instep zone. This is very useful for maintaining the upper in the area of the instep. The vamp remains in place on the foot during supports on sloping terrain, especially downhill.

[0061] The second point **38** for anchoring the second linkage **36** of the second tightening device **33** to the upper **3** includes stitching **55**. In fact, the second linkage **36** is folded and sewn to form a loop **56** in the area of the anchoring point **38**. The loop is retained by an end keeper **57**, which is itself affixed to the vamp **20** by the aforementioned stitching **55**. Here again, the arrangement is simple and lightweight, and preserves the flexibility of the vamp as the end keeper **57** is comprised of a folded strap portion. It is however possible to provide alternative structures for the second anchoring point **38**.

[0062] The second tightening device **33** has intermediate keepers **58**, **59**, **60** located on the lateral portion **23** and medial portion **24** of the vamp **20**. In this case, the second lightening device **33** includes a lateral keeper **58** and two medial keepers **59**, **60**. The number of keepers may be different, either greater or smaller. However, here again, a small number of keepers, between two and five, provides the first device **31** with high tightening effectiveness. The intermediate keepers **58**, **59**, **60** are each comprised of a folded strap portion. The advantage is to preserve the lightness and flexibility of the vamp, or of the upper.

[0063] In a non-limiting fashion, the intermediate keepers **58**, **59**, **60** are arranged at a distance ranging between 15% and 40% of the length of the vamp. The distance of arrangement of the keepers **58**, **59**, **60** is measured from the rear zone **21**, and the length of the vamp is measured from the rear zone **21** to the front zone **22**. This arrangement allows for a uniform tightening of the instep and, consequently, adequate support thereof in the shoe.

[0064] The positioning of the tightening devices **31**, **33** is such that the first anchoring point **37** of the first tightening device **31** and the second anchoring point **38** of the second tightening device **33** are offset longitudinally. The first anchoring point **37** is farther forward, in relation to the second

anchoring point **38**, which is consistent with the difference between the longitudinal extents of the lightening devices **31**, **33** on the vamp. This shifts the two subdivisions **32**, **34** of the vamp longitudinally with respect to one another. The result is two separate tightening zones for the shoe **1**, including the one connected to the first tightening device **31**, which is active primarily in the area of the metatarsus, and the one connected to the second tightening device **33**, which is active in the area of the instep. A resulting advantage is allowing for a discretionary distribution of the tightening of the zones or subdivisions by the user. Because of the invention, a uniform tightening of the foot is more easily obtained.

[0065] As can be understood with reference to each of FIGS. **1-5**, the first tightening device **31** comprises a first device **61** for blocking the first linkage **35** and the second tightening device **33** comprises a second device **62** for blocking the second linkage **36**. This means that the quick blocking of the first linkage **35** and the quick blocking of the second linkage **36** are completely independent from one another. Similarly, the tightening force that is applied by the first device **31** and the tightening force that is applied by the second device **33** are completely independent from each other. This makes it possible to tighten one subdivision **32**, **34** of the vamp without loosening the other. Therefore, the user can advantageously adjust the distribution of the tightening of the vamp, in order to achieve the best cooperation between the vamp and the foot.

[0066] In a non-limiting fashion, as can be understood particularly with reference to FIG. **4**, the second quick-blocking device **62** is a blocking keeper. The first blocking device **61**, described in more detail below, is also a blocking keeper, and that which relates to the second device **62** also relates to the first device **61**.

[0067] The blocking keeper **62** is a lace or linkage guide having the general shape of a crescent, and is made to be identical or similar to that described in the document EP 0 848 917-B1 and U.S. Pat. No. 5,956,823-A, the disclosure of the latter being hereby incorporated by reference thereto in its entirety. The blocking keeper **62** shown in FIG. **4**, however, includes a body **70** made of plastic or metal, for example, and has a peripheral, crescent-shaped sliding pathway **71**. This pathway **71** is convex in its general form, and concave in a cross section, to enable the linkage **36** to be guided easily. A first subdivision **72** of the pathway **71**, positioned on the side of the keepers **58**, **59**, **60**, mentioned above, has a smooth or even surface. This enables the lace **36** to slide easily therethrough. A second subdivision **73** of the pathway **71**, positioned on the side opposite the keepers **58**, **59**, **60**, has an uneven surface, provided to wedge, that is to say, to block the linkage **36** from sliding along the pathway **71**. The subdivision **73** has teeth **74**, for example, projecting within the pathway **71**. A tension on the linkage **36**, exerted so as to space the linkage from the teeth **74**, along the arrow F**1**, for example, makes it possible to tension the second subdivision between the second anchoring point **38** and the second blocking device **62**. Thereafter, the bending or reorienting of the linkage **36** along the arrow F**2**, in the subdivision **73**, which is provided with the teeth **74**, enables the tightening to be maintained. Indeed, the linkage **36** is wedged by the teeth, thereby achieving the blocking effect. The release of the tightening of the linkage is achieved by the reverse action.

[0068] Alternatively, other structures may be provided for the blocking devices **61**, **62**.

[0069] In a non-limiting fashion, and still according to the first embodiment of the invention, the first quick-blocking device **61** and second quick-blocking device **62** are opposite one another transversely. This facilitates the manipulations for tightening the vamp **20**, especially when the two devices **31**, **33** are tightened simultaneously, one with one hand, and the other with the other hand. In this way the foot remains naturally aligned in relation to the leg during tightening.

[0070] For at least one of the tightening devices **31**, **33**, the linkage **35**, **36** is a lace. More specifically, in this embodiment, each of the linkages **35**, **36** is a lace. This is a simple and lightweight component, well-suited for cooperation with a blocking keeper.

[0071] As shown in particular in FIGS. **6** and **7**, and generally with reference to FIGS. **1-7**, the first embodiment of the invention is such that the vamp **20** includes an outer envelope **75**, which comprises a lateral quarter **76** and a medial quarter **77**, the outer envelope **75** demarcating an opening **78** between the quarters **76**, **77**, the opening **78** extending from the rear zone **21** of the vamp **20** to the front **5**, **22**. The lateral quarter **76** of the envelope **75** is an element of the lateral portion **23** of the vamp **20** and, as such, that the lateral quarter **76** demarcates of the lateral side **6** of the upper **3**. Similarly, the medial quarter **77** of the envelope **75** is an element of the medial portion **24** of the vamp **20** and, as such, that the medial quarter **77** demarcates the medial side **7** of the upper **3**. In addition, the opening **78** of the outer envelope **75** merges with the front subdivision **17** of the foot insertion opening **15** of the upper **3**. The outer envelope **75** provides mechanical strength to the upper **3**, and therefore also to the vamp **20**, while allowing foot insertion or removal. Indeed, it is possible to space the quarters **76**, **77** apart from one another when the tightening devices **31**, **32** are not operating.

[0072] By way of a non-limiting example, the opening **78** of the envelope **75**, that is to say, also the subdivision **17** of the foot insertion opening **15**, extends from the rear zone **21** to the front zone **22**, along a distance ranging between 40% and 90% of the length of the vamp. This makes it possible to adjust the tightening of a large area of the upper more easily.

[0073] The first embodiment provides that, by extending in a direction away from the rear zone **21**, the opening **78** of the outer envelope curves towards one of the sides **6**, **7**. A curved opening enables the vamp to flex more easily during a gait cycle, thereby reducing user fatigue.

[0074] For example, the opening **78** of the outer envelope **75**, or the front subdivision **17** of the foot insertion opening **15**, curves toward the medial side **7**. This arrangement enables the vamp **20** to better adapt to feet of various widths and/or thicknesses. In other words, the foot is enveloped more effectively.

[0075] Additionally, the vamp **20** includes an inner envelope **79** which doubles, or underlies, the lateral **76** and medial **77** quarters, and which at least partially covers the opening **78** of the outer envelope **75**. According to the first embodiment, the inner envelope **79** extends opposite the entire opening **78**. Alternatively, however, the inner envelope **79** could be provided to extend opposite only a portion of the opening **78**. In any case, the inner envelope **79** enables a more uniform application of the vamp **20** on the foot, acting as a screen between the foot and the quarters **76**, **77**.

[0076] According to the illustrated embodiment, the inner envelope **79** is reversibly extensible. For example, the inner envelope **79** is made from a stretchable fabric, a layer of elastically deformable material such as rubber, or any equiva-

lent. An extensible envelope further improves the ability of the vamp **20** to conform to the shape of the foot.

[0077] To further improve holding precision, the outer envelope **75** includes a flap **85** extending from one of the lateral **76** and medial **77** quarters, the flap **85** being provided to extend at least partially in the area of the opening **78**, between the quarters **76**, **77**. The improved holding is related to the ability of the flap **85** to slide on the inner envelope **79** during tightening of a device **31**, **33**.

[0078] By way of example, the flap **85** extends from the medial quarter **77** of the outer envelope **75**. Consequently, the flap **85** extends close to or joins the lateral quarter **76**. After tightening of the tightening devices **31**, **33**, the flap **85** is tensioned while assuming the shape of the foot, by taking support on the inner envelope **79**. Thus, the contact between the vamp **20** and the foot remains uniform during the period of use of the shoe. It can also be said that the flap **85** of the illustrated embodiment extends transversely in the area of the instep, thereby bordering the rear zone **21**.

[0079] The flap **85** has a continuous free end **86**, which almost or completely connects to the lateral quarter **76** when the vamp **20** is tightened. This provides a certain continuity to the vamp during use of the shoe.

[0080] In the lengthwise direction of the shoe **1**, the flap **85** extends in the area of the second tightening device **33**. In other words, the flap **85** borders the rear zone **21**. This optimizes the support of the instep.

[0081] For the second tightening device **33**, the invention also provides for the flap **85** to have the keepers of the lateral **23** or medial **24** portion which it extends. More specifically, according to the first embodiment, the flap **85**, for the second tightening device **33**, has the medial keepers **59**, **60** of the medial portion **24**. Thus, the second tightening device **33** is offset toward the lateral side. This arrangement enables the vamp to envelop the foot more efficiently after tightening.

[0082] Additional embodiments of the invention are described below with reference to FIGS. **8-14**. For convenience, the elements shared with the first embodiment are designated by the same reference numerals. Thus, differences are highlighted.

[0083] The second embodiment, according to FIG. **8**, features a shoe **1** comprising an outer sole assembly **2** and an upper **3**. The shoe **1** includes a vamp **20**, as well as a first **31** and second **33** tightening devices having a first linkage **35** and a second linkage **36**, respectively.

[0084] What is specific to the second embodiment of the invention is that the shoe **1** includes a single blocking device **91** acting for the two linkages **35**, **36**. The device **91**, well known to those skilled in the art, is arranged in the area of the rear zone **21**. The device **91** in practice forms a blocking point common to both linkages. This is an alternative embodiment which leads the user to manipulate the tightening device differently. For example, the user can tighten by pulling the linkages with one hand, and can block the linkages with the other hand.

[0085] More generally, the blocking point(s) **39**, **40**, **91** of the linkages **35**, **36** are located in the area of the rear zone **21** of the vamp **20**, with the advantage of providing easy manual access to the linkages **35**, **36** of the tightening devices.

[0086] The third embodiment, according to FIG. **9**, features a shoe **1** comprising an outer sole assembly **2** and an upper **3**. The shoe **1** comprises a vamp **20** and a first **31** and second **33** tightening devices having a first linkage **35** and a second linkage **36**, respectively. The shoe **1** also includes a flap **95** which extends a quarter of the vamp **20**.

[0087] Specific to the third embodiment of the invention is the flap **95** having a discontinuous free end **96**. Consequently, the free end **96** is divided into a plurality of tabs **97**, **98**, for example two in number. The tabs **97**, **98** increase the ability of the flap **95** to conform to the shape of the foot. Each tab here has a keeper **59**, **60**.

[0088] The fourth embodiment, according to FIG. **10**, features a shoe **1** with an outer sole assembly **2** and an upper **3**. The shoe comprises a vamp **20**, first **31** and second **33** tightening devices having a first linkage **35** and a second linkage **36**, respectively.

[0089] Specific to the fourth embodiment of the invention is that, for at least one of the tightening devices **31**, **33**, the linkage **35**, **36** is a strap. In fact, as illustrated, each of the linkages is a strap for each device. The tightening of the devices **31**, **33** are obtained by knotting, for example.

[0090] The fifth and sixth embodiments, according to FIGS. **11** and **12**, feature a shoe **1** having a vamp **20** and an opening **17**, **78** of the outer envelope **75**.

[0091] Specific to these embodiments is that the opening **17**, **78** is straight. This is a more conventional construction of the upper **3**, for which tightening is improved by the invention, in the same spirit as for the other embodiments.

[0092] More particularly for the sixth embodiment, the flap **85** is short, in the sense that there remains a significant gap between its free end **86** and the quarter **76** which it faces. The gap ranges between 40% and 80% of the width of the opening **78**.

[0093] The seventh embodiment, according to FIG. **13**, features a shoe **1** comprising an outer sole assembly **2** and an upper **3**. The shoe comprises a vamp **20** and a first **31** and second **33** tightening devices having a first linkage **35** and a second linkage **36**, respectively. The opening **17**, **78** is straight for this embodiment.

[0094] Specific to the seventh embodiment of the invention is that, in combination with the shape of the opening **17**, **78**, the shoe **1** includes a single blocking device **91** which acts for the two linkages **35**, **36**. This device **91** is arranged in the area of the rear zone **21**, and thus forms a blocking point common to both linkages.

[0095] The eighth embodiment, according to FIG. **14**, features a shoe **1** comprising an outer sole assembly **2** and an upper **3**. The shoe **1** comprises a vamp **20** and a first tightening device **31**, which is provided with a first linkage **35** as is the case, for example, with the shoe according to the first embodiment.

[0096] Specific to the eighth embodiment of the invention is that, for one of the subdivisions **32**, **34** of the vamp **20**, the tightening device **101** includes a flap **105** that is reversibly tightened by a tightening mechanism **106**. In this case, and in a non-limiting fashion, it is the second tightening device **101** that includes a flap. The reverse is possible, in the sense that it the first device could include a flap.

[0097] More specifically, the flap **105** extends from the lateral side **6**, being affixed to the lateral quarter **76**. The tightening mechanism **106** further includes a strap **107** affixed to the flap **105**, adapted to cooperate with a return **108** itself affixed to the upper **3**, to ensure the reversible tensioning of the vamp **20**. The tightening mechanism **106** includes the return **108**. This embodiment is an alternative construction that uses a single linkage. In the end, there are indeed two

tightening devices **31**, **101**, the one including a linkage **35**, and the other including a mechanism with no linkage.

[0098] In any case, the invention is made from materials and using techniques of implementation known to one of ordinary skill in the art.

[0099] The invention is not limited to the embodiments described above, and includes all technical equivalents that fall within the scope of the claims that follow.

[0100] In particular, one of the subdivisions of the vamp can be tightened by a device having no linkage.

[0101] At least because the invention is disclosed herein in a manner that enables one to make and use it, by virtue of the disclosure of particular exemplary embodiments of the invention, the invention can be practiced in the absence of any additional element or additional structure that is not specifically disclosed herein.

1. An article of footwear comprising:
an outer sole assembly;
an upper extending above the outer sole assembly;
the upper comprising:
a vamp comprising:
a length extending a rear zone to a front zone;
a width extending between a lateral portion and a medial portion; and
a height extending from the outer sole assembly to an apex;
a first tightening device structured and arranged to tighten a first subdivision of the vamp;
a second tightening device structured and arranged to tighten a second subdivision of the vamp;
at least one of the first and second tightening devices comprises a linkage extending from an anchoring point in relation to the upper to a blocking point in relation to the upper;
the anchoring point located in an area of the vamp;
the blocking point being located in an area of the vamp.

2. An article of footwear according to claim **1**, wherein:
the first tightening device extends from the rear zone to the front zone, along a distance ranging between 40% and 90% of the length of the vamp.

3. An article of footwear according to claim **1**, wherein:
the first tightening device comprises a first linkage;
the anchoring point for anchoring the first linkage of the first tightening device to the upper comprises stitching.

4. An article of footwear according to claim **1**, wherein:
the first tightening device comprises keepers located on the lateral portion and medial portion of the vamp.

5. An article of footwear according to claim **1**, wherein:
the second tightening device extends from the rear zone to the front zone, along a distance ranging between 15% and 60% of the length of the vamp.

6. An article of footwear according to claim **1**, wherein:
the second tightening device comprises a second linkage;
the anchoring point for anchoring the second linkage of the second tightening device to the upper comprises stitching.

7. An article of footwear according to claim **1**, wherein:
the second tightening device comprises keepers located on the lateral portion and medial portion of the vamp.

8. An article of footwear according to claim **1**, wherein:
the first tightening device comprises a first anchoring point and the second tightening device comprises a second anchoring point;
the first anchoring point of the first tightening device and the second anchoring point of the second tightening device are longitudinally offset.

9. An article of footwear according to claim **1**, wherein:
the first tightening device comprises a first linkage and the second tightening device comprises a second linkage;
the first tightening device comprises a first blocking device for blocking the linkage;
the second tightening device comprises a second device for blocking the linkage.

10. An article of footwear according to claim **9**, wherein:
the first blocking device and second blocking device are transversely opposite one another.

11. An article of footwear according to claim **1**, further comprising:
a single blocking device;
the first tightening device comprises a first linkage and the second tightening device comprises a second linkage;
the blocking point is comprised by the single blocking device acting on both the first and second linkages.

12. An article of footwear according to claim **1**, wherein:
the blocking point for the one of the linkages is located in the area of the rear zone of the vamp.

13. An article of footwear according to claim **12**, wherein:
the linkage for at least the one of the tightening devices is a lace.

14. An article of footwear according to claim **1**, wherein:
for at least one of the tightening devices, the linkage is a strap.

15. An article of footwear according to claim **1**, wherein:
the vamp comprises an outer envelope including a lateral quarter and a medial quarter;
the outer envelope demarcates an opening between the lateral and medial quarters;
the opening extending from the rear zone of the vamp toward the front.

16. An article of footwear according to claim **15**, wherein:
in a direction extending away from the rear zone, the opening curves towards either a lateral side or a medial side of the article of footwear.

17. An article of footwear according to claim **16**, wherein:
the opening curves toward the medial side.

18. An article of footwear according to claim **15**, wherein:
the opening is straight.

19. An article of footwear according to claim **15**, wherein:
the vamp comprises an inner envelope underlying the lateral and medial quarters, and at least partially covering the opening of the outer envelope.

20. An article of footwear according to claim **19**, wherein:
the inner envelope is reversibly extensible.

21. An article of footwear according to claim **15**, wherein:
the outer envelope comprises a flap extending from either the lateral quarter or the medial quarter, the flap being provided to extend at least partially in the area of the opening, between the lateral and medial quarters.

22. An article of footwear according to claim **21**, wherein:
the flap extends from the medial quarter o f the outer envelope.

23. An article of footwear according to claim **21**, wherein:
the flap has a continuous free end.

24. An article of footwear according to claim **21**, wherein:
the flap has a discontinuous free end.

25. An article of footwear according to claim **21**, wherein:
the flap extends in an area of the second tightening device, in a direction of the length of the article of footwear.

26. An article of footwear according to claim **25**, wherein:
the second tightening device comprises keepers located on the lateral portion and medial portion of the vamp;
a plurality of the keepers of the second tightening device are located on the flap.

27. An article of footwear according to claim **1**, wherein:
for one of the first and second subdivisions of the vamp, the second tightening device comprises a flap reversibly tightened by a tightening mechanism.

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