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(54) **SPORTS FOOTWEAR**

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(57) **ABSTRACT**

An article of footwear, such as a boot, adapted to be removably retained on a sports apparatus, the boot including an outer sole assembly, an upper and a fastening element, the latter being adapted to cooperate with a locking mechanism, itself adapted to be affixed to the apparatus. The boot includes a connection mechanism adjustable in position, which adjustably connects the fastening element to the outer sole assembly.

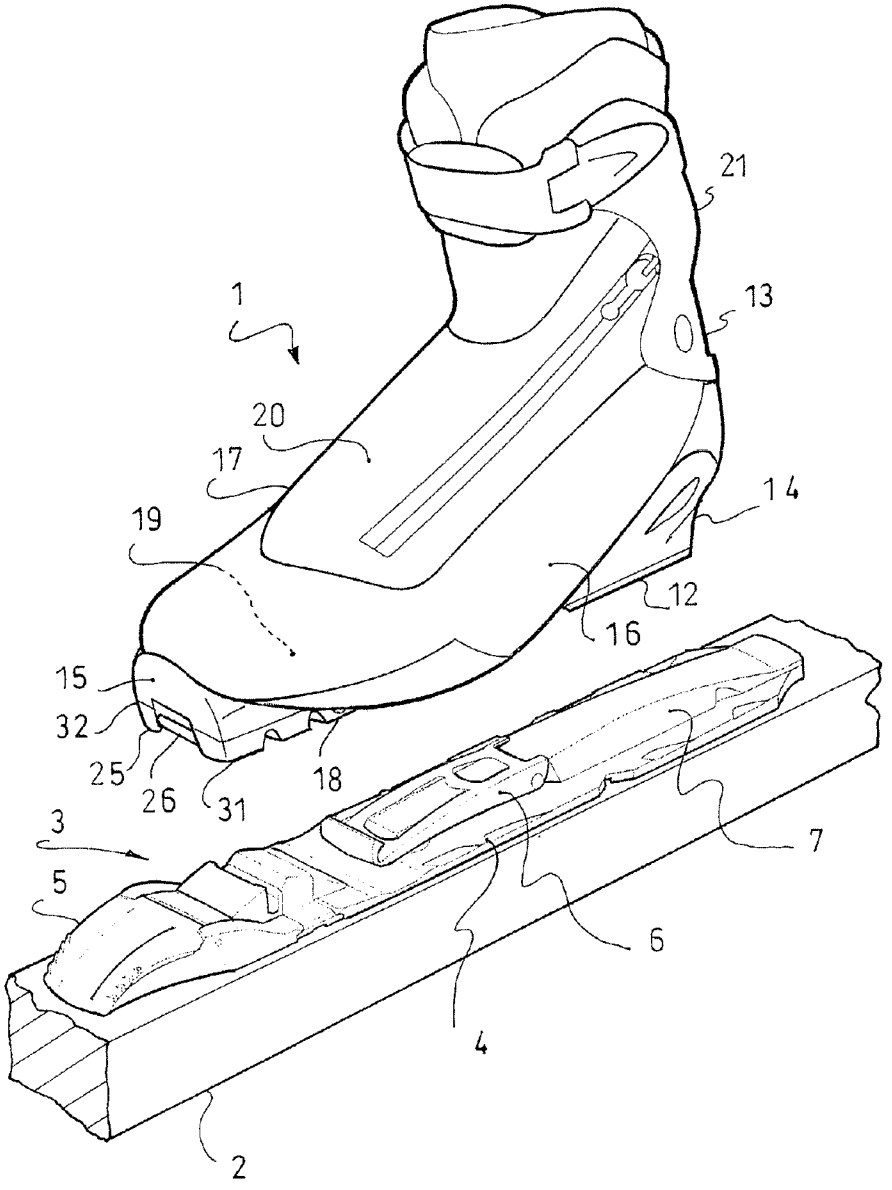


Fig. 1

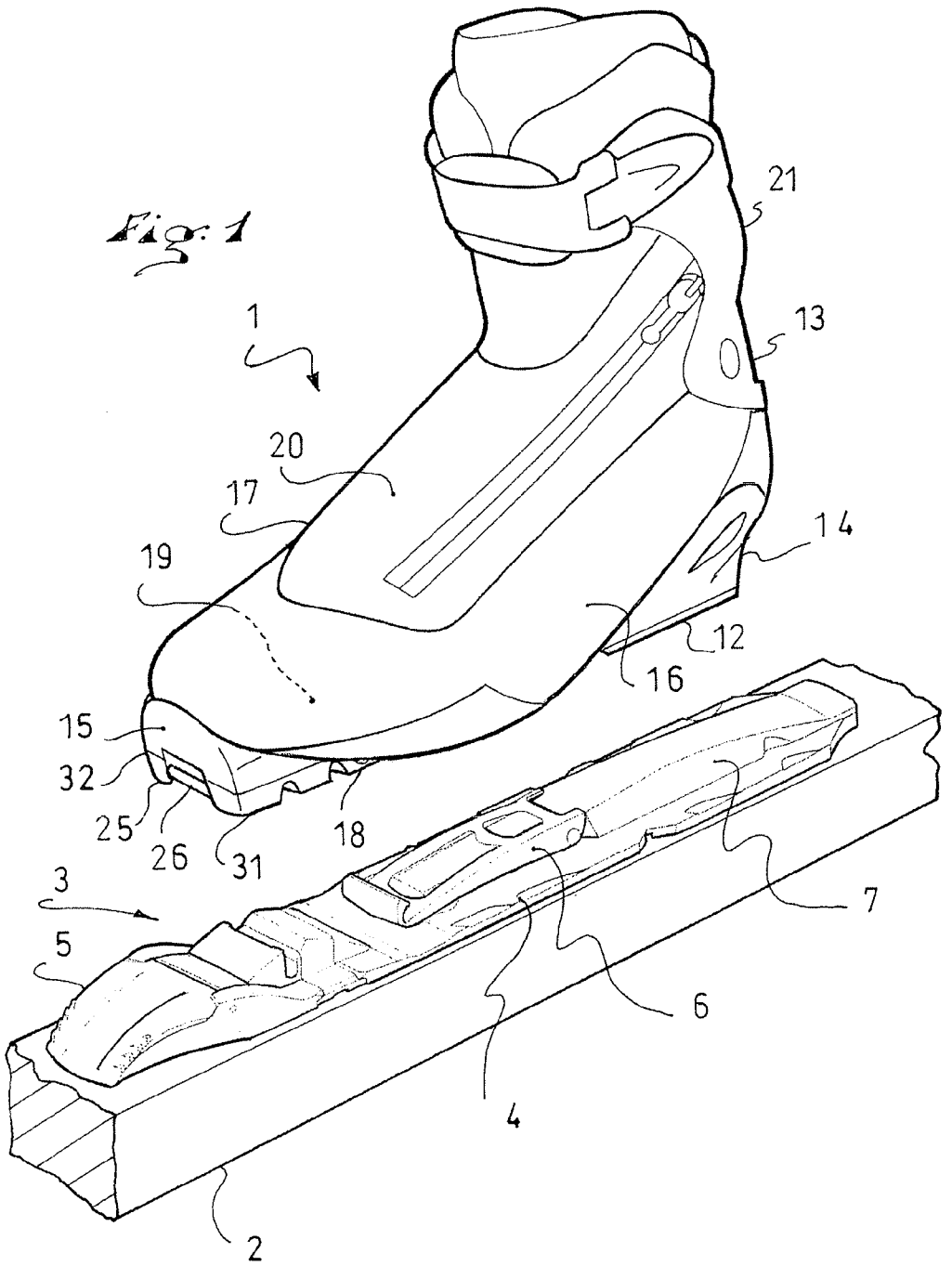
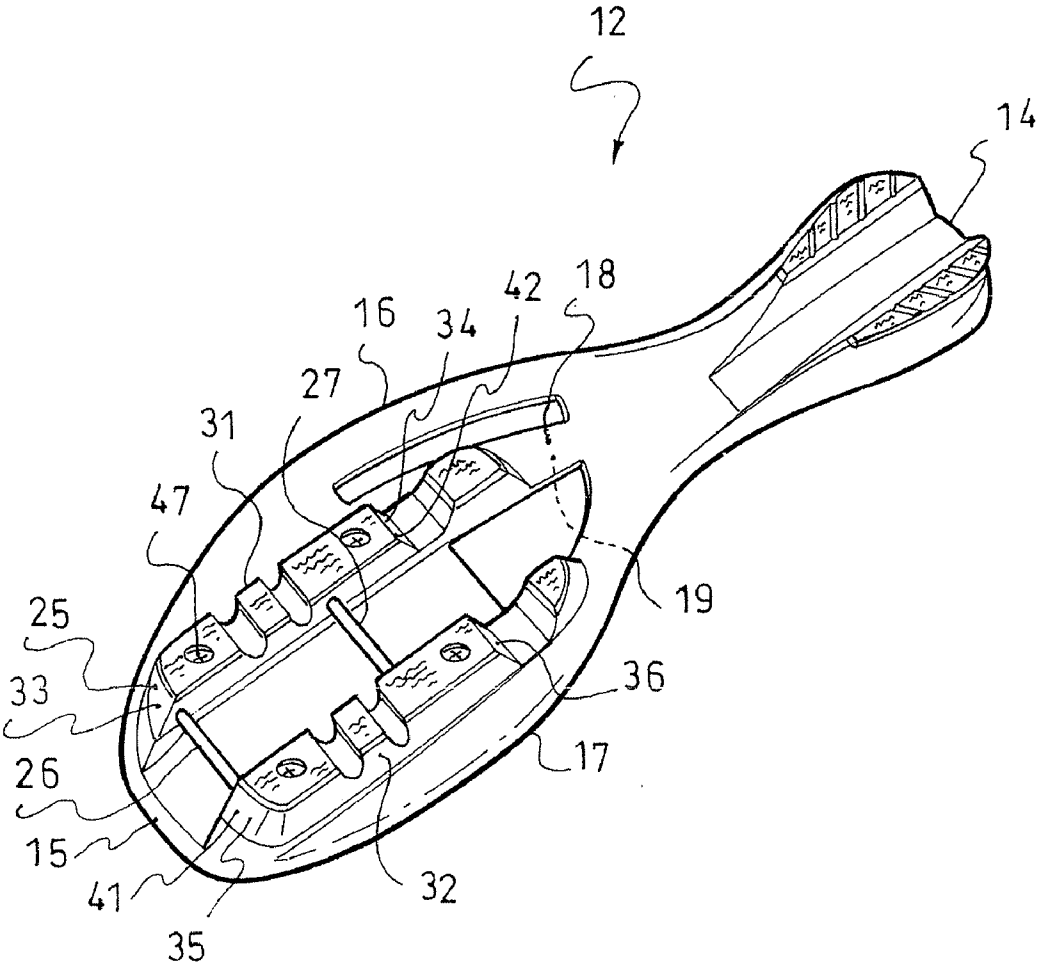


Fig. 2



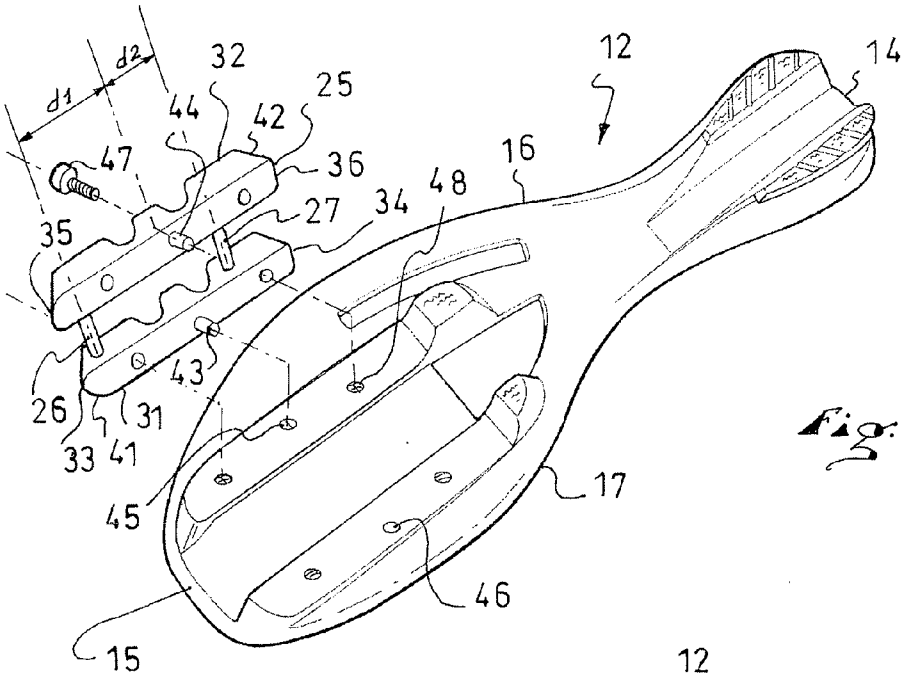

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Fig. 3

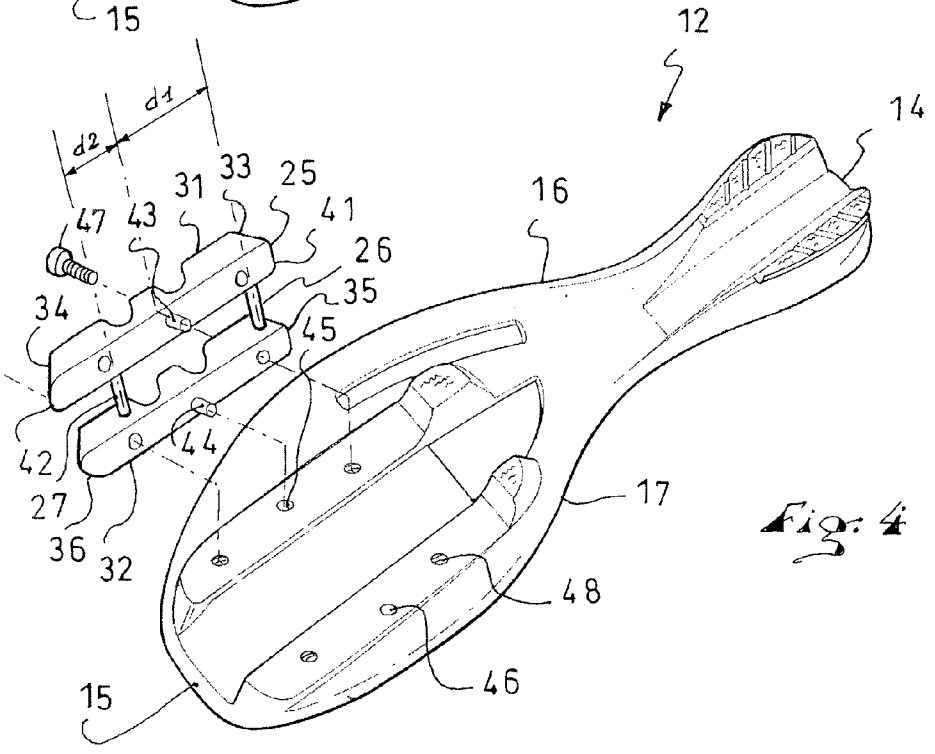
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Fig. 4

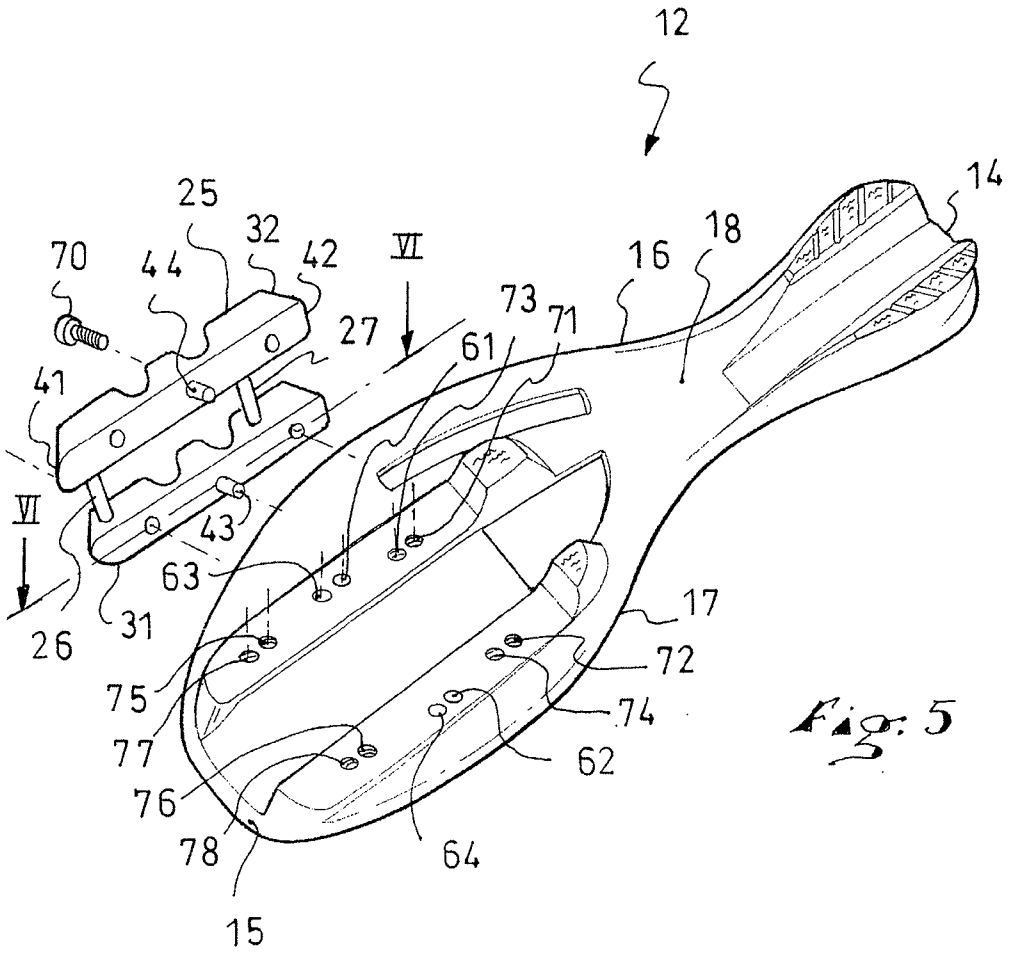
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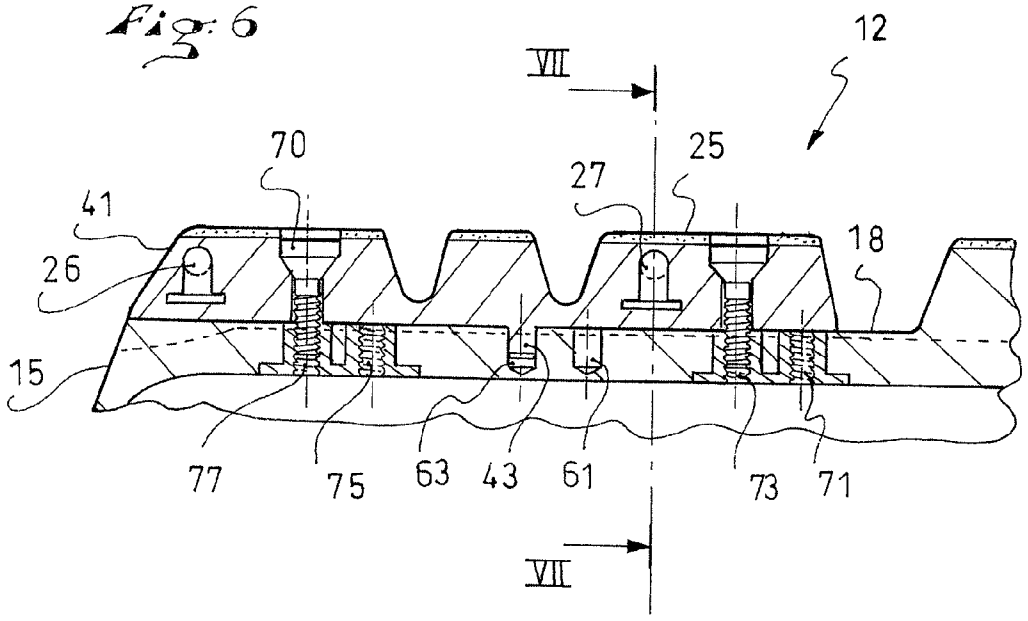
Fig. 5

Fig. 6



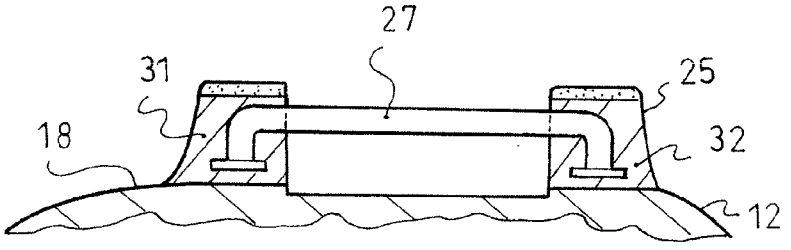


Fig. 7

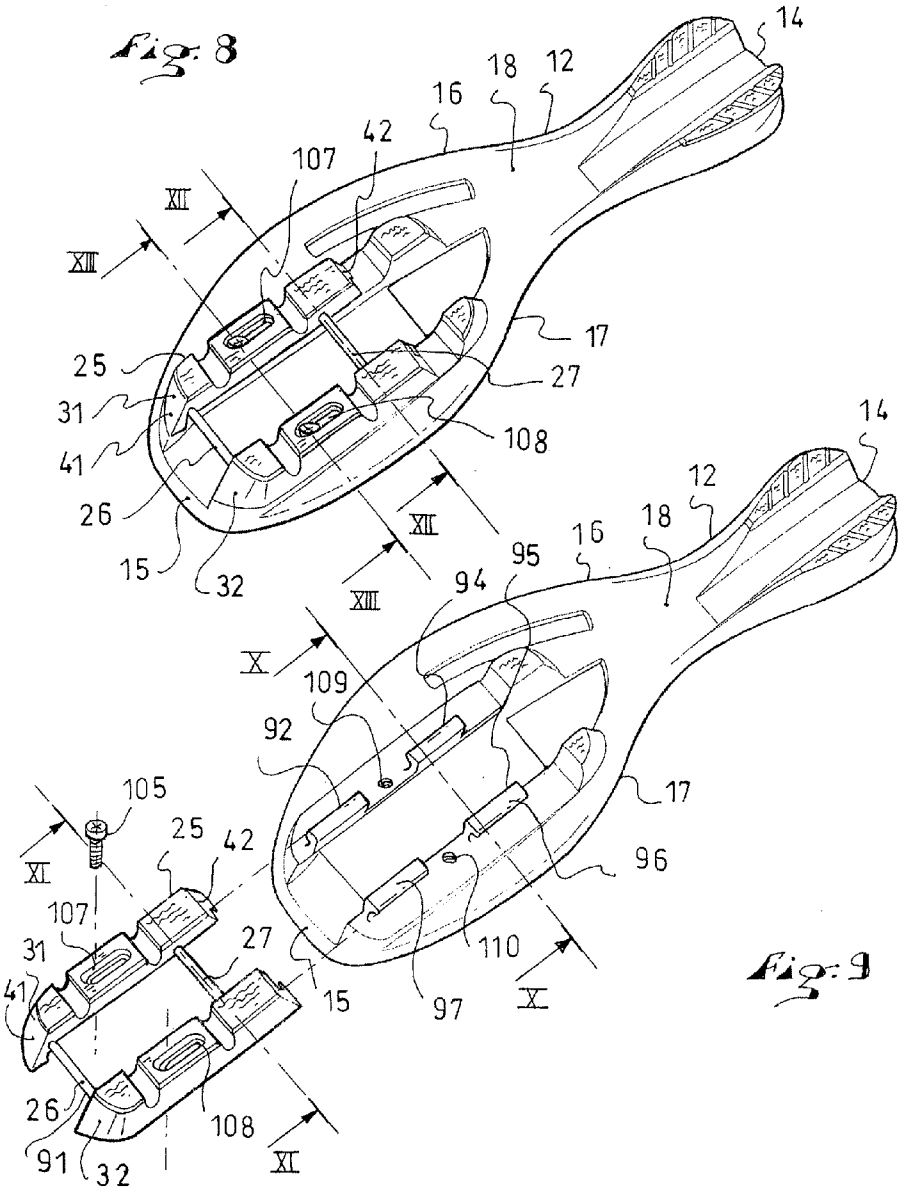

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Fig. 8

Fig. 9

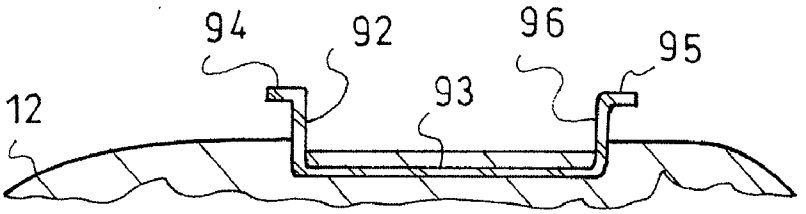


Fig: 10

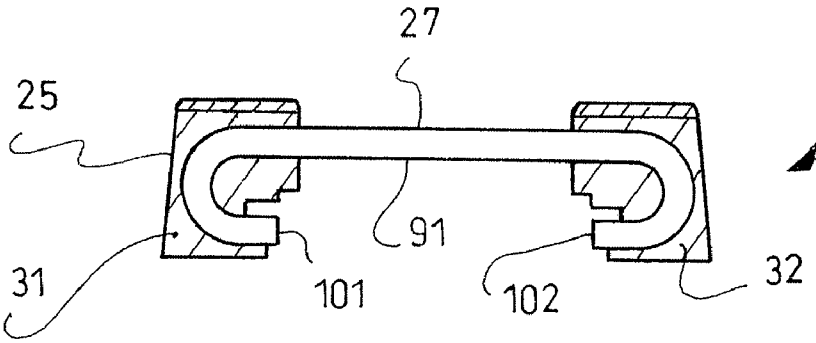


Fig: 11

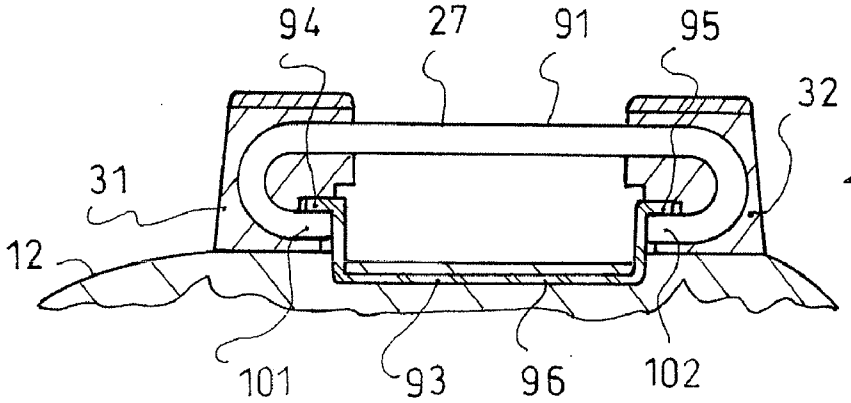


Fig: 12

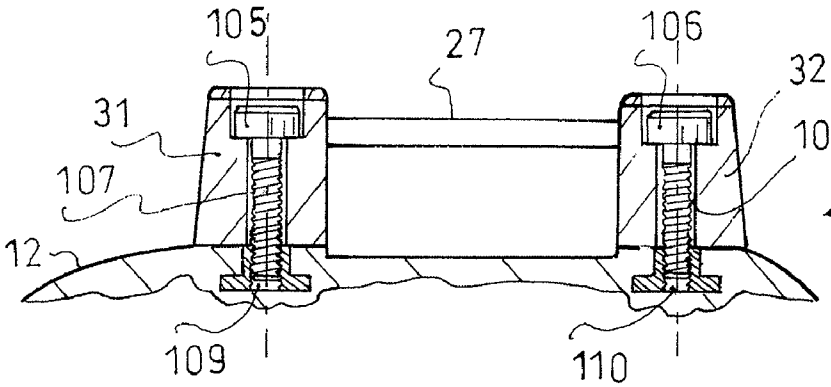
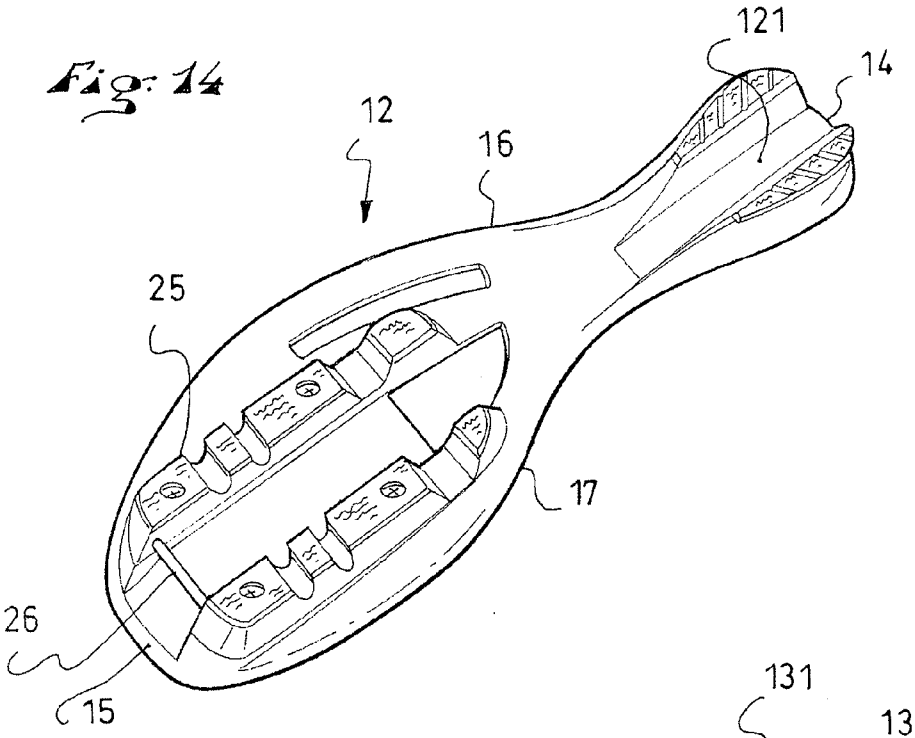


Fig: 13

Fig. 14



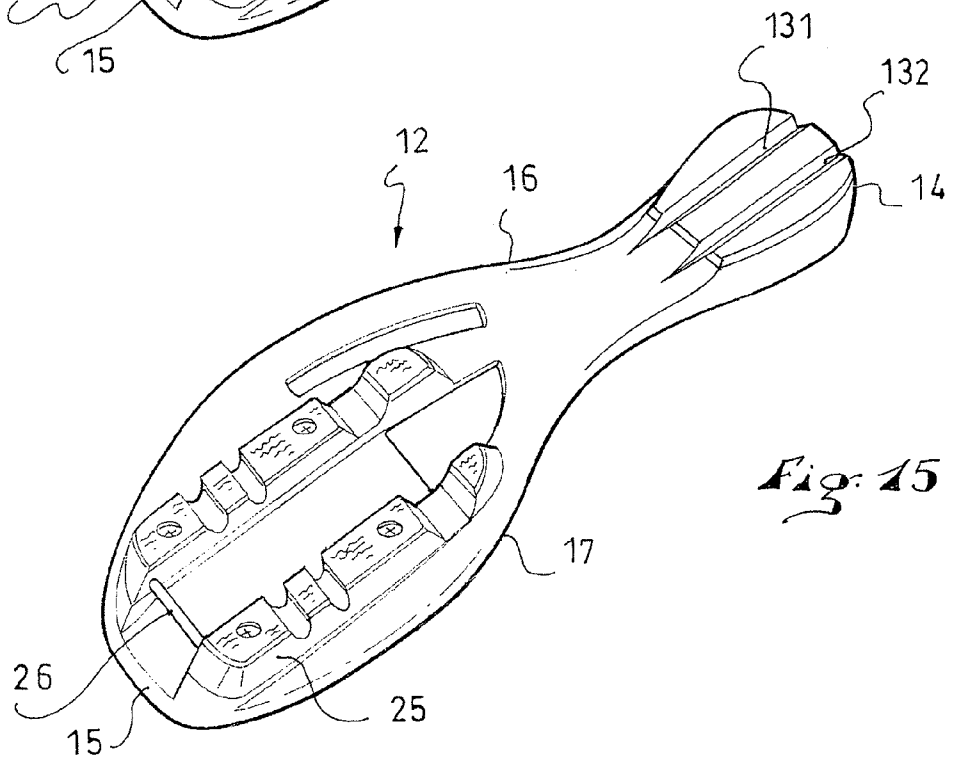


Fig. 15

SPORTS FOOTWEAR

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application is based upon French Patent Application No. 10/04892, filed Dec. 15, 2010, 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, such as a shoe or a boot, adapted to be reversibly retained on a sports apparatus and, more particularly, such an article of footwear being adapted for the practice of snow sports.

[0004] Footwear of the aforementioned type can be used in disciplines such as cross-country or telemark skiing, snowshoeing, roller skating, cycling, and the like.

[0005] 2. Background Information

[0006] An article of footwear (hereafter "boot," for convenience) of the aforementioned type includes an outer sole assembly, an upper, and a fastening element, the latter being adapted to cooperate with a locking mechanism, which itself is adapted to be affixed to the apparatus. The fastening element and locking mechanism constitute a fastening mechanism, or binding, that is conventionally provided to retain the article of footwear reversibly on the apparatus, i.e., the locking mechanism allowing the boot to be selectively fastened or released therefrom .

[0007] For example, in the discipline of cross-country skiing, it is common for each locking mechanism to be capable of selectively retaining and releasing the boot, thereby providing the skier with the option of skiing or walking.

[0008] It is also conventional to allow the back of the boot, that is to say the heel, to move alternatively away from and toward the ski in repeated cycles. This facilitates the characteristic cross-country skiing maneuvers, in particular because the skier can more freely perform movements than he/she could not if the heels were immobilized. In terms of structure, the fastening element generally includes a rigid rod or pin, a portion of which is oriented parallel to the outer sole assembly and along a transverse direction of the thereof. The portion of the fastening element is separate from the sole assembly itself, and generally has a circular cross section adapted to cooperate with jaws of the locking mechanism, in a hinge-like fashion. For example, two jaws are provided, which can be proximal or spaced from one another, to retain or to release, respectively, the fastening element. Thereby, the boot can be selectively retained or released. This arrangement, widely used, is particularly satisfactory because it is simple, easy to manufacture, and easy to use. Indeed, the fastening element is affixed to the outer sole assembly in such a way so as not to interfere with walking.

[0009] However, several disadvantages related to this arrangement have been observed.

[0010] First, because it rotates in the jaws, the fastening element can wear out. Consequently, the rotational guiding of the boot, relative to the locking mechanism, occurs with a clearance that increases in proportion to the number of cycles performed. When the clearance increases substantially, steering precision is reduced and greater forces are required to steer the ski. Indeed, the friction of the fastening element in the jaws increases. This requires changing the boot because the fastening element is worn out, yet the remainder of the boot usually is not. Therefore, the wear of the fastening element reduces the useful life of the boot. This is unfortunate because the user often wishes to keep a boot that has well-adapted to his/her foot.

[0011] Another drawback associated with the arrangement of the fastening element is the user-specific characteristic of the boot. Indeed, due to the fixed position of the fastening element relative to the sole assembly, the boot is not suitable for all users. Not all users adjust the same way to the position of articulation of the boot relative to the apparatus being operated. Some users may prefer a more forward articulation or, conversely, a more rearward articulation. A deviation in either direction, even a small deviation, can substantially affect the operation of a ski. A particular boot may give satisfaction to a majority of users, but not to all users. Therefore, a user sometimes does not obtain maximum efficiency in the transmission of steering impulses or in the perception of sensory information related to steering of the ski.

SUMMARY

[0012] In view of the preceding, the invention provides an improved article of footwear, such as a shoe or a boot, particularly in the area of its outer sole assembly. More specifically, an article of footwear according to the invention provides for an increased useful life. An article of footwear according to the invention, i.e., a shoe or a boot (hereafter referred to as a boot, for convenience) is constructed to be more versatile, so that it can adapt to most users. In particular, any user should be able to obtain maximum efficiency in the transmission of steering impulses or in the perception of sensory information related to steering of an associated sports apparatus, such as a ski.

[0013] To this end, the invention provides a boot adapted to be removably retained on a sports apparatus, the boot including an outer sole assembly, an upper, and a fastening element, the latter being adapted to cooperate with a locking mechanism, which itself is adapted to be affixed to the apparatus.

[0014] A boot according to the invention includes a connecting mechanism that is adjustable in position, which adjustably connects the fastening element to the outer sole assembly.

[0015] The connecting mechanism, adjustable in position, can be provided to be a removable connecting mechanism that removably connects the fastening element to the outer sole assembly.

[0016] This means that the fastening element can be affixed to or separated from the outer sole assembly, as needed.

[0017] Therefore, the fastening element can be replaced, for example, if it were to become worn out. The fastening element is a wear element that fits into the much larger unit formed by the boot. As a result, the user can keep a boot that fits him/her well, and can recover a satisfactory steering precision with such boot.

[0018] Furthermore, after removal, the fastening element can be replaced by another whose structure is selectively identical or different. The position of the fastening element can also be provided to be changed, such as, for example, along a longitudinal direction of the boot. Some users prefer a more forward position, while others prefer a more rearward position. Furthermore, any given user has the flexibility to adjust his/her boot to a particular steering style. This is particularly advantageous in cross-country skiing, depending on

whether the user is practicing the alternate step or the skating step. As a result, the boot of the invention can satisfy the greatest number of users, and each user will obtain maximum efficiency in the transmission of steering impulses and in the perception of sensory information related to steering.

[0019] To summarize, the boot of the invention has an extended useful life and it optimizes the operation of a sports apparatus such as a ski.

BRIEF DESCRIPTION OF DRAWINGS

[0020] Other features and advantages of the invention will be better understood from the following description, with reference to the annexed drawings illustrating, by way of non-limiting embodiments, how the invention can be implemented, and in which:

[0021] FIG. **1** is a front perspective view of an assembly that includes a boot according to a first embodiment of the invention, as well as a partially shown ski and a device for retaining the boot on the ski;

[0022] FIG. **2** is a front and bottom perspective view of the outer sole assembly of the boot of FIG. **1**, in the case in which the fastening element is affixed to the outer sole assembly;

[0023] FIG. **3** is a view similar to FIG. **2**, in the case in which the fastening element is separated from the outer sole assembly and in a first orientation;

[0024] FIG. **4** is similar to FIG. **3**, in the case in which the fastening element is in a second orientation;

[0025] FIG. **5** is similar to FIG. **3**, of a second embodiment of the invention;

[0026] FIG. **6** is a cross-section along the line VI-VI of FIG. **5**, shown with the fastening element affixed to the outer sole assembly;

[0027] FIG. **7** is a cross-section along the line VII-VII of FIG. **6**;

[0028] FIG. **8** is a view similar to FIG. **2**, of a third embodiment, in which the fastening mechanism is affixed to the outer sole assembly;

[0029] FIG. **9** is a view similar to FIG. **8**, in the case in which the fastening mechanism is separated from the outer sole assembly;

[0030] FIG. **10** is a cross-section along the line XX of FIG. **9**;

[0031] FIG. **11** is a cross-section along the line XI-XI of FIG. **9**;

[0032] FIG. **12** is a cross-section along the line XII-XII of FIG. **8**;

[0033] FIG. **13** is a cross-section along the line XIII-XIII of FIG. **8**;

[0034] FIG. **14**, similar to FIG. **2**, shows a fourth embodiment of the invention, in which the fastening mechanism is affixed to the outer sole assembly; and

[0035] FIG. **15**, similar to FIG. **2**, shows a fifth embodiment of the invention, in which the fastening mechanism is affixed to the outer sole assembly.

DETAILED DESCRIPTION

[0036] The embodiments of the invention described hereinafter relate more specifically to boots intended for the practice of cross-country skiing, ski touring, or telemark skiing. However, the invention applies to other disciplines, such as those mentioned hereinabove.

[0037] In the following description, the term "boot" is used for convenience, but without limitation to a particular type of article of footwear. For example, the boot can have a low upper, i.e., with the upper edge of the upper extending below the ankle, or a high upper, i.e., with the upper edge of the upper extending above the ankle, or even a mid-upper, i.e., with the upper edge of the upper extending at or approximate to the height of the ankle.

[0038] The first embodiment is illustrated with reference to FIGS. **1** to **4**. FIG. **1** shows an assembly that includes a boot **1**, a ski **2**, and a device **3** for retaining the boot on the ski.

[0039] Conventionally, the retaining device **3** includes a baseplate **4**, which carries a reversible locking mechanism **5**, an elastic return mechanism **6**, and a longitudinal guiding rib **7**. For example, it is possible to affix the locking mechanism **5**, the return mechanism **6**, and the guiding rib **7** to the baseplate **4**, to make the retaining device **3** cohesive. The retaining device **3** and the ski **2** will not be further described, as they are well known to one of ordinary skill in the art. The retaining device can be any of various types, such as that disclosed in U.S. Pat. No. 6,017,050, the disclosure of which is hereby incorporated by reference thereto in its entirety.

[0040] The boot **1** includes an outer sole assembly **12** and an upper **13**. The outer sole assembly **12** can include one, two, or more portions. The boot **1** extends lengthwise from a rear end, or heel **14**, to a front end, or tip **15**, and widthwise between a lateral side **16** and a medial side **17**. Likewise, the outer sole assembly **12** extends lengthwise from the heel **14** to the tip **15**, and widthwise between the lateral side **16** and the medial side **17**. The sole assembly **12** also extends heightwise, or depthwise, between a free surface **18** and a connection surface **19**. The free surface **18** is adapted to contact the ground, the retaining device **3**, or the ski **2**. The connection surface **19** serves to affix the sole assembly **12** to the remainder of the boot, for example by means of an adhesive bond, i.e., by gluing.

[0041] As shown, the upper **13** includes a lower portion **20**, structured to surround the foot, and an upper portion **21**, provided to surround the ankle. However, as mentioned above, the invention encompasses an upper including only the lower portion.

[0042] The boot **1** further includes a fastening element **25**, the latter being structured and arranged to cooperate with, i.e., to engage with, the retaining device **3**, the retaining device itself being structured and arranged to be affixed to the ski **2**. More specifically, the fastening element **25** cooperates with the locking mechanism **5** and, according to the first embodiment, with the elastic return mechanism **6**.

[0043] According to the invention, as can be understood from a review of all of FIGS. **1** to **4**, the boot includes a removable connection mechanism that removably connects the fastening element **25** to the outer sole assembly **12**. The connection mechanism, or position-adjustable connection mechanism, makes it possible to affix or separate the fastening element **25**, selectively, to/from the outer sole assembly **12**. It is therefore possible to disassemble and reassemble the fastening element **25**, as necessary, to replace it or to modify its position relative to the outer sole assembly **12**. This makes it possible to manage the problems related to wear and tear, by replacing an old element **25** with a new one. This also makes it possible, as further described below, to modify the interaction between the boot and the ski. Modifying the position of the fastening element **25** changes the effect of the support forces or the impulse forces related to steering the ski. This enables the user to better adapt the boot to his/her needs.

[0044] According to the illustrated first embodiment, from a structural point of view, the fastening element **25** includes a first transverse wire **26**, such as a rigid wire, or pin or rod (such fastening element hereafter referred to as a "wire," without excluding other structures which would perform its function described herein). The wire **26** is provided, depending upon the arrangement of the fastening element **25** on the outer sole assembly **12**, either to be removably retained by the locking mechanism **5**, or to be elastically biased by the return mechanism **6**. In this case, the bias bringing the outer sole assembly **12** back toward the baseplate **4**, and therefore also toward the ski **2**.

[0045] In the same context, the fastening element **25** includes a second transverse wire **27**. Again, depending on the arrangement of the fastening element **25** on the outer sole assembly **12**, the second wire **27** is either removably retained by the locking mechanism **5** or is elastically biased by the return mechanism **6**.

[0046] It is to be understood that each of the wires **26**, **27** is oriented parallel to the outer sole assembly **12**, in a direction extending from one of the lateral **16** or medial **17** sides to the other of these sides. The wires **26**, **27** are spaced apart from the outer sole assembly **12** by a distance between 1 mm and 25 mm. Satisfactory results can be achieved with the distance within the range of 5 mm to 15 mm.

[0047] The longitudinal spacing between the wires is between 30 mm and 60 mm, for example 50 mm.

[0048] Each wire **26**, **27** is comprised of a metallic material, such as steel or any equivalent material, and can have a circular cross-section, as shown. A circular cross section allows for better cooperation with the locking mechanism **5** or the return mechanism **6**.

[0049] The fastening element **25** includes a first longitudinal bar **31** and a second longitudinal bar **32**, both provided to be supported on the outer sole assembly **12**. The first bar **31** extends longitudinally from a first end **33** to a second end **34**, and the second bar **32** extends longitudinally from a first end **35** to a second end **36**. For example, the first ends **33**, **35** and second ends **34**, **36** of the bars are provided to be transversely opposite one another, respectively. Thus, the fastening element **25** has a transverse symmetry that facilitates an inversion of its direction of assembly, as further described below.

[0050] Each bar **31**, **32** is comprised of one or more synthetic materials, such as plastic, rubber, or the like.

[0051] For example, the first wire **26** and second wire **27** are provided to be embedded in the bars **31**, **32**, which provides cohesiveness to the fastening element **25**. Therefore, the fastening element **25** has two transverse wires **26**, **27** and two longitudinal bars **31**, **32**, these portions being integrated to form a unitary, single piece. Therefore, the fastening element **25** is an element that is easy to handle.

[0052] The first wire **26** is located on the side of the respective first ends **33**, **35** of the first **31** and second **32** bars. In the same context, the second wire **27** is located on the side of the respective second ends **34**, **36** of the first **31** and second **32** bars. It follows that one of the wires **26**, **27** is located in the area of the toes when the fastening element **25** is positioned on the sole assembly **12** and the boot is worn by the user, whereas the other wire **26**, **27** is located at the boundary between the toes and the metatarsus, or even in the area of the metatarsus. This arrangement facilitates cooperation between the boot **1** with the retaining device **3** via an articulation in the area of the toe and an elastic return in the area of the metatarsus. The heel can be lifted alternately relative to the ski, for efficient steering.

[0053] According to the first embodiment of the invention, the boot **1** includes a mechanism for positioning the fastening element **25** on the outer sole assembly **12** according to two positions reversed relative to one another, a first position for which a first end **41** of the fastening element **25** is turned toward the front end **15** of the boot **1**, and a second position for which a second end **42** of the fastening element **25** is turned toward the front end **15** of the boot **1**. In practice, the first end **41** of the fastening element **25** is demarcated by the first ends **33**, **35** of the bars **31**, **32**. By analogy, the second end **42** is demarcated by the second ends **34**, **36** of the bars **31**, **32**.

[0054] The arrangement described above makes it possible to invert the position of the wires **26**, **27** along the outer sole assembly **12**. This makes it possible to modify the role of each wire **26**, **27**, in the sense that each can selectively cooperate with the locking mechanism **5** or the elastic return mechanism **6**. For example, it is thereby possible to deal with variations in the wear and tear of the wires.

[0055] In a non-limiting manner, according to the first embodiment of the invention, the positioning mechanism mentioned above includes two studs **43**, **44** extending from the fastening element **25**, and has two openings **45**, **46** arranged in the outer sole assembly **12** for receiving the studs **43**, **44**; the studs **43**, **44** and openings **45**, **46**, being transversely opposite one another, respectively. More specifically, a first stud **43** extends from the first bar **31**, whereas the second stud **44** extends from the second bar **32**. This facilitates the positioning of the fastening element **25** on the outer sole assembly **12** in either one of the positions mentioned previously.

[0056] For facilitating manufacture, the studs **43**, **44** and openings **45**, **46** have circular cross-sections; this configuration is not essential, however.

[0057] The distance d**1** between the first wire **26** and the studs **43**, **44** is provided to be different from the distance d**2** between the second wire **27** and the studs **43**, **44**. Thus, inverting the direction of assembly of the fastening element **25** on the outer sole assembly **12** changes the distance between a given wire **26**, **27** and the front end **15** of the boot **1**. In other words, depending upon the direction of assembly of the fastening element **25**, the wires **26**, **27** are more or less close to the front end **15**. It follows that the user can choose either one of the two positions of the wires **26**, **27**, to adapt the boot to his or her steering style. This will advantageously optimize steering.

[0058] In addition, the removable connection mechanism, or position-adjustable connection mechanism, which connects the fastening element **25** to the outer sole assembly **12**, includes screws **47** cooperating with the fastening element **25** and threaded openings **48** of the outer sole assembly **12**. There are four screws **47**, for example, in the illustrated embodiment (see FIG. **2**). There are also four threaded openings. This makes it possible to exert tightening forces in the vicinity of the wires **26**, **27**. A resulting advantage is a more accurate transmission of sensory information.

[0059] Additional embodiments are described hereinafter with reference to FIGS. **5** to **15**. For convenience, the elements shared with the first embodiment are designated by the same reference numerals. Thus, only the differences are highlighted.

[0060] In this regard, a second embodiment, according to FIGS. **5** to **7**, has an outer sole assembly **12**, with its rear end **14** and front end **15**, its lateral side **16** and medial **17** sides, and its free **18** and connection **19** surfaces. There is also a fastening element **25**, with its first **26** and second **27** wires, as well as its first **31** and second **32** longitudinal bars.

[0061] The second embodiment is specific to the manner in which the fastening element **25** is positioned on the outer sole assembly **12**. The boot **1** in this case includes a mechanism for positioning the fastening element **25** on the outer sole assembly **12**, via a discrete adjustment in at least two positions, viz., a first position for which a first end **41** of the fastening element **25** is located at a first distance from the front end **15** of the boot, and a second position for which the first end **41** of the fastening element **25** is located at a second distance from the front end **15** of the boot. This configuration allows the fastening element **25** to be moved, and repositioned, forward or rearward, as needed, to achieve the same effects as with the first embodiment.

[0062] Still according to the second embodiment, the positioning mechanism includes two studs **43**, **44** extending from the fastening element **25**, and has at least four openings **61**, **62**, **63**, **64** arranged in the outer sole assembly **12** for receiving the studs **43**, **44**, the studs and openings being transversely opposite in pairs. More specifically, the two studs **43**, **44** can selectively take place in two orifices **61**, **62**, respectively, which are spaced from the front ends **15** of the sole assembly **12**, or in two openings **63**, **64**, which are closer to the end. The result is a discrete longitudinal adjustability with two positions.

[0063] Alternatively, the number of positions can be provided to be greater than two, i.e., such as three, four, or five, for example.

[0064] The removable connection mechanism, or position-adjustable connection mechanism, which connects the fastening element **25** to the outer sole assembly **12**, includes a plurality of screws **70** (such as four) cooperating with the fastening element and threaded openings **71**, **72**, **73**, **74**, **75**, **76**, **77**, **78** of the outer sole assembly **12**, the number of threaded openings being greater than the number of screws. For example, eight threaded openings **71** to **78** are provided to be transversely opposite one another in pairs, in correlation with the four openings **61** to **64** for receiving the studs **43**, **44**. In a non-limiting manner, the openings **61** to **64** for receiving the studs and the threaded openings **71** to **78** for receiving the screws are arranged in two longitudinal rows, that is to say, parallel to one another and transversely opposite one another. This provides the boot **1** with a simple structure for adjusting the longitudinal position of the fastening element **25**.

[0065] A third embodiment of the invention is illustrated with reference to FIGS. **8** to **13**. This embodiment also has an outer sole assembly **12**, with its rear **14** and front **15** ends, its lateral **16** and medial **17** sides, and its free **18** and connection **19** surfaces. There is also a fastening element **25**, with its first **26** and second **27** wires, as well as its first **31** and second **32** longitudinal bars.

[0066] The third embodiment is also specific to the manner in which the fastening element **25** is positioned on the outer sole assembly **12**. The boot **1** in this case includes a mechanism for positioning the fastening element **25** on the outer sole assembly **12**, via a continuous adjustment over a nominal range, the displacement of the fastening element **25** relative to the outer sole assembly **12** occurring longitudinally. This arrangement increases the possibilities of adjustment of the position of the fastening element **25**. The adjustment is selectively carried out to move the fastening element toward or, conversely, away from the front end **15** of the boot.

[0067] In a non-limiting manner, the positioning mechanism includes a sliding rack **91** and a rail **92**. For example, the sliding rack **91** is associated with the fastening element **25**, and the rail **92** is associated with the outer sole assembly **12**. This arrangement enables the fastening element **25** to be positioned on the outer sole assembly **12** by sliding in a direction along the length of the boot **1**.

[0068] As can be understood in particular with reference to FIGS. **9** and **10**, the rail **92** has a U-shaped cross-section, with a base **93** and with free ends **94**, **95** bent in a widening direction, i.e., transversely outwardly. According to the third embodiment, the rail **92** includes a plurality of distinct segments **96**, **97**, namely, two in this case. Alternatively, however, the rail could include only one segment, or, alternatively, three or more. The advantage of the two segments **96**, **97** is localized cooperation with the wires **26**, **27**, as can be better understood from the following description. Consequently, the outer sole assembly **12** retains its flexibility between the segments **96**, **97**, which guarantees greater comfort of use.

[0069] The rail **92** is for example made from a metallic material, such as steel or any equivalent material. The rail **92** is affixed to the outer sole assembly **12**, for example by inserting its base **93** in the constituent material of the sole assembly.

[0070] As can be understood in particular with reference to FIGS. **11** and **12**, the sliding rack **91** is formed by the wires **26**, **27**. Indeed, the wires are bent into a C-shape, their ends **101**, **102** being structured and arranged to contact the bent ends **94**, **95** of the rail **92**. Each wire **26**, **27** comes into contact with one of the segments **96**, **97**. The sliding rack **91** is also segmented, as the wires are separated from one another. The bent portions **101**, **102** of each wire **26**, **27** are partially embedded in the bars **31**, **32**. This is what ensures the cohesiveness of the fastening element **25**. This structure has the advantage of being simple to manufacture, insofar as it reduces the number of elements required.

[0071] The sliding rack **91** is provided to be reversibly immobilized relative to the rail **92**. In fact, as shown in FIGS. **8**, **9** and **13**, the removable connection mechanism, which connects the fastening element **25** to the outer sole assembly **12**, includes at least one screw **105**, **106** cooperating with a slit **107**, **108** of the fastening element **25** and a threaded opening **109**, **110** of the outer sole assembly **12**. Each slit **107**, **108** is parallel to the rail **92** or to the sliding rack **91**, to allow movement of the fastening element **25** with respect to the sole assembly **12**, a movement that occurs along the length of the boot **1**, over a range whose length corresponds to the length of the slits **107**, **108**. It is to be understood that the slits are transversely opposite one another. For example, the longitudinal range of movement of the fastening element **25** relative to the outer sole assembly **12**, when the screws are positioned but not tightened, is between 10 mm and 35 mm.

[0072] A fourth embodiment is described with reference to FIG. **14**. This is a simpler version of the invention. More specifically, the fastening element **25** includes a single transverse wire **26**, which is adapted to cooperate with the locking mechanism **5**. As a result, the boot **1** can pivot more freely relative to the ski **2**, which is well suited to the practice of the alternate step. The fourth embodiment can include a position-adjustable connection mechanism like any of those described above.

[0073] Further, the outer sole assembly **12** has a central longitudinal groove **121** in the area of the heel **14**. This groove is adapted to cooperate with the guiding rib **7** of the retaining device **3**. This guides the outer sole assembly **12** during a rolling movement of the foot and enables transverse support forces when the sole assembly **12** is flat on the device **3**.

[0074] A fifth embodiment is described with reference to FIG. **15**. The outer sole assembly **25** is shown here to have two longitudinal grooves **131**, **132** that are off-centered, or offset, in the area of the heel **14**. In this case, the outer sole assembly is adapted to cooperate with a retaining device, not shown, which is provided with two guiding ribs. The fifth embodiment can include a position-adjustable connection mechanism like any of those described above.

[0075] For all of the illustrated embodiments, the fastening element **25** is located in a zone of the outer sole assembly that is adapted to extend, at least partially, in the area of the toes. This makes it possible to steer the ski with the boot heel, which alternately separates from it.

[0076] Further, to facilitate the alternating movement of the heel, the upper **13** is flexible, and the outer sole assembly is also flexible, at least in the area of the zone opposite the toes and the junction between the toes and the metatarsus. The outer sole assembly **12** is flexible along a length ranging between 5% and 45% of the length of the boot, from the front end **15**. This improves steering by enabling better foot rolling movement.

[0077] In any case, the boot of the invention can be made from materials and by using techniques of implementation known to one of ordinary skill in the art.

[0078] In addition, the invention is not limited to the particular embodiments described above and shown in the drawings; it includes all of technical equivalents that fall within the scope of the claims that follow.

[0079] In particular, other structures can be provided for the fastening element, for example by replacing the wires with members such as lugs, brackets, or the like.

[0080] With respect to adjusting the position of the fastening element **25** on the outer sole assembly **12**, as is the case in the third embodiment, for example, the fastening element **25** can be provided to be removable or, conversely, non-removable.

[0081] When the fastening element **25** is simply interchangeable, it can be provided to be replaced with an identical element or with a similar element. In the latter case, the longitudinal position of the wire(s) **26**, **27** is different.

[0082] In the invention, the positioning mechanisms are actuated using a tool, since they include screws. It is also possible to provide positioning mechanism that are actuated by hand, that is to say without tools, i.e., tool-less.

[0083] In addition to the foregoing, the invention disclosed herein by way of exemplary embodiments suitably may be practiced in the absence of any element or structure which is not specifically disclosed herein.

1. A boot structured and arranged to be selectively retained or released with respect to a sports apparatus, the boot comprising:
- an outer sole assembly;
- an upper;
- a fastening element structured and arranged to cooperate with a locking mechanism, the locking mechanism adapted to be affixed to the sports apparatus;
- a position-adjustable connection mechanism structured and arranged to connect the fastening element selectively, in at least either of two different positions, to the outer sole assembly.

2. A boot according to claim **1**, wherein:
the position-adjustable connection mechanism is a removable connection mechanism removably connecting the fastening element to the outer sole assembly.

3. A boot according to claim **1**, wherein:
the fastening element includes at least one transverse wire.

4. A boot according to claim **3**, wherein:
the one transverse wire is a first transverse wire;
the fastening element further includes a second transverse wire.

5. A boot according to claim **1**, wherein:
the fastening element includes a first longitudinal bar and a second longitudinal bar.

6. A boot according to claim **1**, wherein:
the fastening element comprises:
- a first longitudinal bar and a second longitudinal bar;
- at least one transverse wire extending between respective ends of the first and second longitudinal bars.

7. A boot according to claim **1**, wherein:
the fastening element comprises:
- a first longitudinal bar and a second longitudinal bar;
- a first transverse wire and a second transverse wire, the first and second transverse wires extending between respective ends of the first and second longitudinal bars.

8. A boot according to claim **1**, wherein:
the position-adjustable connection mechanism is structured and arranged to connect the fastening element to the outer sole assembly selectively in at least either of the two different positions in which the two different positions are reversed relative to one another, said two different positions comprising:
- a first position in which a first end of the fastening element faces a front end of the boot;
- a second position in which a second end of the fastening element faces the front end of the boot.

9. A boot according to claim **8**, wherein:
the position-adjustable connection mechanism further comprises:
- two studs extending from the fastening element;
- two openings arranged in the outer sole assembly, said two openings being configured and arranged to receive the studs;
- the two studs being transversely opposed;
- the two openings being transversely opposed.

10. A boot according to claim **9**, wherein:
the first wire and the studs are longitudinally spaced apart by a first distance;
the second wire and the studs are longitudinally spaced apart by a second distance;
the first distance being different from the second distance.

11. A boot according to claim **8**, wherein:
the position-adjustable connection mechanism is a removable connection mechanism removably connecting the fastening element to the outer sole assembly;
the removable connection mechanism comprises a plurality of screws cooperating with the fastening element and threaded openings positioned in outer sole assembly.

12. A boot according to claim **1**, wherein:
the position-adjustable connection mechanism is structured and arranged to connect the fastening element to the outer sole assembly selectively in at least either of two different positions in which the two different positions comprise:
a first position in which a first end of the fastening element is located at a first distance from a front end of the boot;
a second position in which the first end of the fastening element is located at a second distance from the front end of the boot.

13. A boot according to claim **12**, wherein:
the position-adjustable connection mechanism further comprises:
two studs extending from the fastening element;
at least four openings arranged in the outer sole assembly, said openings being configured and arranged to receive the studs;
the studs being transversely opposed;
the openings comprising at least two pairs of transversely opposed openings.

14. A boot according to claim **12**, wherein:
the position-adjustable connection mechanism is a removable connection mechanism removably connecting the fastening element to the outer sole assembly;
the removable connection mechanism comprises a plurality of screws cooperating with the fastening element and a plurality of threaded openings of the outer sole assembly;
the plurality of threaded openings being greater in number than the plurality of screws.

15. A boot according to claim **1**, wherein:
the position-adjustable connection mechanism is structured and arranged to connect the fastening element to the outer sole assembly via a continuous adjustment over a predetermined range;
the fastening element is connectable to the outer sole assembly along a continuous adjustment range extending longitudinally of the outer sole assembly.

16. A boot according to claim **15**, wherein:
the position-adjustable mechanism comprises a sliding rack and a rail.

17. A boot according to claim **16**, wherein:
the sliding rack is associated with the fastening element;
the rail is associated with the outer sole assembly.

18. A boot according to claim **15**, wherein:
the position-adjustable connection mechanism is a removable connection mechanism removably connecting the fastening element to the outer sole assembly;
the removable connection mechanism comprises a screw structured and arranged to cooperate with a slit of the fastening element and a threaded opening of the outer sole assembly.

19. A boot according to claim **1**, wherein:
the fastening element is located in a zone of the outer sole assembly structured and arranged to extend into an area corresponding to toes of a wearer's foot.

20. A boot according to claim **1**, wherein:
the outer sole assembly has a central longitudinal groove in an area of a heel of the boot.

21. A boot according to claim **1**, wherein:
the outer sole assembly has two off-centered longitudinal grooves in an area of a heel of the boot.

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