(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) **EP 2 010 016 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
26.10.2011 Bulletin 2011/43

(21) Application number: **07746177.0**

(22) Date of filing: **25.04.2007**

(51) Int Cl.:
A43C 11/14 *(2006.01)* ***A43C 7/00*** *(2006.01)*

(86) International application number:
PCT/KR2007/002016

(87) International publication number:
WO 2007/126241 (08.11.2007 Gazette 2007/45)

(54) **DEVICE FOR TYING SHOELACES**

VORRICHTUNG ZUM BINDEN VON SCHUHBÄNDERN

DISPOSITIF POUR NOUER LES LACETS DE CHAUSSURES

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

(30) Priority: **27.04.2006 KR 20060038323**
11.04.2007 KR 20070035665

(43) Date of publication of application:
07.01.2009 Bulletin 2009/02

(73) Proprietor: **Whang, Jong O**
Pyeongnae-dong
Namyangiu-si, Gyeonggi-do 472-938 (KR)

(72) Inventor: **Whang, Jong O**
Pyeongnae-dong
Namyangiu-si, Gyeonggi-do 472-938 (KR)

(74) Representative: **Pulieri, Gianluca Antonio**
Jacobacci & Partners S.p.A.
Piazza della Vittoria, 11
25122 Brescia (IT)

(56) References cited:
JP-U- 02 130 209
KR-Y1- 200 409 510
KR-Y1- 950 009 223
US-A- 5 778 498
US-B1- 6 571 432

EP 2 010 016 B1

Description

[Technical Field]

[0001] The present invention relates to a footwear, and more particularly, to such a lace fastening device, which is easy to mount and detach and simple in structure since a control member rotated while a fastening member is fastened to the inside of a receiving member is restored by a magnetic body, and which can keep a stable fastened state since the upper end portion of a lace fastened to a second fastening part pressurizes the lower end portion of the lace.

[Background Art]

[0002] In general, a footwear is one of life goods used in daily life, and recently, their use has been greatly increased due to an increase of people's social activities or leisure time period owing to five working days per week. Such footwears have various kinds according to their use purposes, but people can wear most of footwears using laces without regard to their use purposes.

[0003] The footwear 10 includes a body 11 having a receiving space 12 for receiving and protecting a user's foot, a protective cover 13 located on an opened instep portion of the body 11 for protecting the top of the user's foot, and connection links 14 oppositely arranged on both sides of the instep portion of the body 11 at regular intervals and fixed to the footwear 10 via fixing members 15, whereby a lace (L) is cross-fastened to the footwear.

[0004] However, the conventional footwear as constructed above has several problems in that it is complicated and takes much time to wear and unwear the footwear since the user has to tightly pull the laces after untying and slackening the laces to wear the footwear, and in that the laces may be loosened while the user walks, and in that the outward appearance is not good since knots of the laces are complex when the laces are tied.

[0005] KR 20-0409510 Y1 discloses a fastening device for footwear which serves as basis for claim 1.

[Disclosure]

[Technical Problem]

[0006] Accordingly, the present invention has been made in an effort to solve the above-mentioned problems occurring in the prior arts, and it is an object of the present invention to provide a lace fastening device, which is easy to use and simple in structure since a fastening member is released from a fastened state while a control member is separated from a magnetic body since the magnetic body is mounted inside a receiving member, and which can keep a stable fastened state of a lace since the upper end portion of the lace fastened to a second fastening part pressurizes the lower end portion of the lace.

[Technical Solution]

[0007] To achieve the above objects, the present invention provides a lace fastening device for a footwear worn on a user in such a manner that a lace is cross-fastened to connection links oppositely formed on an instep portion of the footwear at regular intervals, comprising: a first fastening part fastened between the connection links to which the lace is connected and having a fastening member fastened to the inside of a receiving member while rotating and restoring a control member, the first fastening part releasing the fastened state of the fastening member while rotating the control member to separate it from a magnetic body; and a second fastening part to which an end portion of the lace passing the final connection link of the footwear is fit to and stackingly connected to the inside of a fixing member, so that the second fastening part can keep a tightly fastened state of the lace while the upper end portion of the stackingly connected lace pressurizes the lower end portion of the lace.

[Advantageous Effects]

[0008] The lace fastening device according to the present invention is easy to mount and detach and simple in structure since a control member rotated while a fastening member is fastened to the inside of a receiving member is restored by a magnetic body, thereby reducing the manufacturing cost. Moreover, the lace fastening device can rapidly fasten the lace to the shoe and keep a stable fastened state since the upper end portion of the lace fastened to the second fastening part pressurizes the lower end portion of the lace, thereby improving productivity.

[Description of Drawings]

[0009]

FIG. 1 is a perspective view of a conventional footwear.

FIG. 2 is a perspective view of a footwear to which a lace fastening device according to a first preferred embodiment of the present invention is applied.

FIG. 3 is an exploded perspective view of a first fastening part according to the present invention.

FIG. 4 is an assembled perspective view of the first fastening part.

FIG. 5 is a view showing a fastened state of the first fastening part, wherein

FIG. 5a illustrates a state where a fastening member is fit and fastened to a receiving member,

FIG. 5b illustrates a state where the fastening member is fastened to the receiving member,

FIG. 5c illustrates a state where a control lever is rotated to release the fastened state of the fastening member, and

FIG. 5d illustrates a state where the fastening member is separated from the receiving member in the rotated state of the control lever.
FIG. 6 is a bottom perspective view of a second fastening part according to the present invention.
FIG. 7 is a side view of the second fastening part.
FIG. 8 is a view showing a coupled state of the second fastening part, wherein
FIG. 8a illustrates a state where a lace is tightly tied on a fixing member, and
FIG. 8b illustrates a state where the tightly tied state of the lace is released by lifting up the lace.
FIG. 9 is an exploded perspective view of a second preferred embodiment of the present invention.
FIG. 10 is a sectional view of the second preferred embodiment.
FIG. 11 is a perspective view of a footwear to which the second preferred embodiment of the present invention is applied.

[Mode for Invention]

[0010] Reference will be now made in detail to the preferred embodiment of the present invention with reference to the attached drawings. FIG. 2 is a perspective view of a footwear to which a lace fastening device according to a first preferred embodiment of the present invention is applied, FIG. 3 is an exploded perspective view of a first fastening part according to the present invention, FIG. 4 is an assembled perspective view of the first fastening part, FIG. 5 is a view showing a fastened state of the first fastening part, FIG. 6 is a bottom perspective view of a second fastening part according to the present invention, and FIG. 7 is a side view of the second fastening part.

[0011] According to the present invention, there is provided a lace fastening device for a footwear worn on a user in such a manner that a lace (L) is cross-fastened to connection links 14 oppositely formed on an instep portion of the footwear at regular intervals, which includes: a first fastening part 100 fastened between the connection links 14 to which the lace (L) is connected and having a fastening member 130 fastened to the inside of a receiving member 110 while rotating and restoring a control member 120, the first fastening part 100 releasing the fastened state of the fastening member 130 while rotating the control member 120 to separate it from a magnetic body 140; and a second fastening part 200 to which an end portion of the lace (L) passing the final connection link 14 of the footwear 10 is fit to and stackingly connected to the inside of a fixing member 210, so that the second fastening part 200 can keep a tightly fastened state of the lace while the upper end portion of the stackingly connected lace (L) pressurizes the lower end portion of the lace (L).

[0012] The first fastening part 100 includes: the receiving member 110 having a body 111 inwardly dented at both side surfaces of the center thereof, the body 111 having a support piece 111a, which protrudes from a side thereof and has a through-hole 111a' to connect the lace (L) thereto, a receiving space 111b formed on the other side of the body 111 to fasten the fastening member 130, a mounting space 111c opened at the bottom of the body 111 to mount the control member thereon, and rotation holes 111d formed on both sides of the mounting space 111c; the control member 120 made of a metal material, the control member 120 having a control board 121 mounted in the mounting space 111c, the control board 121 having rotary shafts 121a formed at both sides thereof and inserted into the rotation holes 111d, control levers 121b formed on both ends of the rotary shafts 121a to rotate the control board 121, and a control protrusion 121c protruding from the rear portion of the control board 121 to detachably mount the fastening member 130; the fastening member 130 fastened to the receiving space 111b and having a fastening plate 131, the fastening plate 131 having a plurality of fastening slots 131a to release the fastened state between the control member 120 and the fastening member 130 by an adjustment of the control protrusion 121c, support pieces 131b protruding from both sides of the rear portion of the fastening plate 131 and respectively having through-holes 131b' for fastening the lace (L) thereto; and the magnetic body 140 mounted on the upper surface of the lower end body 111 of the receiving space 111b to restore the control member 120, which repeatedly performs a rotation, while the fastening member 130 is fastened to the control member 120.

[0013] The second fastening part 200 includes: a fixing member 210 having a hollow formed therein and a fixing hole 211 to be fixed on the top of the instep of the footwear 10; a guide space 212 formed on a side of the fixing member 210 and having a movement preventing jaw 213 for preventing movement of the lace (L) fit to a side of the fixing member 210; and a guide rod 214 disposed on the lower end portion of the guide space 212 to guide the lace (L) to the guide space 212 while wrapping the lace (L).

[0014] Moreover, the lace fastening device according to the present invention further includes a third fastening part 300. The third fastening part 300 includes: a receiving member 310 having a body 311, which has a curved inner surface to be in close contact with the instep portion of the footwear 10 and has a coupling space 311a formed by an opened inside thereof, a fixing frame 312 fixed on the upper portion of the body 311 via a fixing screw 312a and having a spring 313 therein, a pressurizing piece 314 fit into the fixing frame 312 and having a semicircular section, a press piece 315 joined to an end of the pressurizing piece 314 through the body 311 for pressing the pressurizing piece 314, a release piece 316 rotatably mounted between the pressurizing piece 314 and the fixing frame 312, a plate spring 317 coupled to an end portion of the release piece 316 and operating elastically, and at least one connection link 318 formed at a side of the body to be connected with the lace (L); and a fastening

member 320 inserted into the coupling space 311a and having a plurality of retaining protrusions 321 protruding in one direction to be fastened to the release piece 316 and at least one coupling link 322 formed at a side thereof to which the lace (L) is connected.

[0015] Next, a process that the lace (L) is fastened to the footwear 10 to which the present invention is applied will be described.

[0016] First, as shown in FIGS. 2 to 6, the lace (L) is cross-connected at least once between the connection links 14 oppositely arranged at both sides of the footwear 10, and ends of the lace (L) direct the top of the footwear 10.

[0017] The direction of the lace (L), the through-holes 111a' of the receiving member 110 and the through-holes 131b' of the fastening member 130 are located on the same line, and then, the lace (L) is connected to the through-holes 111a' and 131b' in a straight line.

[0018] In this instance, the receiving member 110 and the fastening member 130 of the first fastening part 100 keep a separated state.

[0019] In addition, after the lace (L) is directed toward the second fastening part 200 formed on the uppermost portion of the footwear 10, the front end of the lace (L) is inserted to the guide space 212, and more concretely, above the movement preventing jaw 213, and then, the inserted lace (L) is pushed to the lower end portion of the guide space 212 to be drawn outwardly from the fixing member 210.

[0020] The front end of the drawn lace (L) is turned on the guide rod 214, and then, fit into the guide space 212 below the movement preventing jaw 213 in such a way as to be closely positioned beneath the lace (L) fit into the guide space 212.

[0021] As described above, in a state where the lace (L) is inserted into the second fastening part 200, when the front end of the lace (L) located at the lower portion is pulled to the center of the footwear 10, the lace (L) is moved through the guide space 212. When the front end of the lace (L) is pulled down, since the upper end portion of the lace (L) downwardly pressurizes the lower end portion of the lace (L), the lace (L) can keep a tightly fastened state without being loosened from the second fastening part 200.

[0022] As described above, in a state where the lace (L) is fastened and fixed to the second fastening part 200, a user grasps the receiving member 110 and the fastening member 130, and then, inserts the fastening member 130 into the receiving space 111b.

[0023] When the fastening member 130 is fastened to the receiving space 111b while passing the control protrusion 121c of the control member 120 made of the metal material, the control protrusion 121c of the control member 120 is rotated on the rotary shafts 121a by the fastening slots 131a of the fastening member 130, and at the same time, restored by a magnetic force of the magnetic body 140. The fastening member 130 is fastened to the receiving space 111b while repeating the above steps.

[0024] Here, the control member 120 may have the control board 121 entirely made of the metal material or partially made of the metal material, namely, only a portion closely contacting with the magnetic body 140 is made of the metal material.

[0025] Furthermore, to release the fastened state of the first fastening part 100, when the control levers 121b formed at both sides of the control member 120 are rotated on the rotary shafts 121a, the control board 121 is rotated on the rotary shafts 121a, so that the control protrusion 121c is released from the fastening slots 131a of the fastening member 130 and the control board 121 is separated from the magnetic body 140 simultaneously.

[0026] As described above, when the control member 120 is rotated, the fastening member 130 is outwardly separated from the receiving member 110. After the separation of the fastening member 130, when the rotation of the control levers 121b is removed, the control member 120 is restored to the original state by the magnetic force of the magnetic body 140.

[0027] Additionally, to release the fastened state of the lace (L) from the second fastening part 200, when the user grasps the upper end portion of the lace (L) and pulls up it to the upper portion of the guide space 212, the pressurizing force pressurizing the lower end portion of the lace (L) is removed, so that the lace (L) can be relaxed since the lower end portion of the lace (L) can be freely moved.

[0028] Moreover, another preferred embodiment of the present invention will be described as follows.

[0029] First, as shown in FIG. 9 or 10, in a state where the receiving member 310 and the fastening member 320 are fastened with each other oppositely to the lace (L), the user grasps the receiving member 310 and the fastening member 320 with a hand, and then, inserts the fastening member 320 to the coupling space 311a of the receiving member 310.

[0030] In this instance, the retaining protrusion 321 of the fastening member 320 is in contact with the release piece 316 and fastened to the receiving member 310 while moving forward, and the release piece 316 supports the retaining protrusion 321 inclinedly protruding in one direction while contacting with the retaining protrusion 321 by elasticity of the plate spring 317, so that the fastened state between the receiving member 310 and the fastening member 320 can be kept without release.

[0031] As described above, to take off the footwear 10 in a state where the third fastening part 300 is fastened to the footwear and the footwear is tightened, when the user grasps the receiving member 310 and presses the pressing piece 315 of the receiving member 310 downwardly, the pressurizing piece 314 having the semicircular section pressurizes a portion of the release piece 316, so that the release piece 316 is rotated toward the upper portion of the body 311 by the pressurizing piece 314 and separated from the retaining protrusion 321, whereby the fastened state can be released.

[0032] After that, the user rotates the receiving member 310 and the fastening member 320 toward both sides of the footwear 10 to laterally relax the footwear 10, so that the user can rapidly and easily take off the footwear.

[0033] Since the third fastening part 300 can be reduced and increased in its size according to the number of the connection links 318 and 322 formed at both sides of the receiving member 310 and the fastening member 320, the lace fastening device according to the present invention can be applied to small footwears, which children wear, and to footwears having long ankle portions, such as mountain-climbing boots, military shoes, work shoes, and so on, and fasten the lace to the shoe while selectively controlling tightening and release.

[Industrial Applicability]

[0034] As described above, the lace fastening device according to the present invention is easy to mount and detach and simple in structure since a control member rotated while a fastening member is fastened to the inside of a receiving member is restored by a magnetic body, thereby reducing the manufacturing cost. Moreover, the lace fastening device can rapidly fasten the lace to the shoe and keep a stable fastened state since the upper end portion of the lace fastened to the second fastening part pressurizes the lower end portion of the lace, thereby improving productivity.

Claims

1. A lace fastening device for a footwear worn on a user in such a manner that a lace (L) is cross-fastened to connection links (14) oppositely formed on an instep portion of the footwear at regular intervals, comprising:

   a first fastening part (100) fastened between the connection links (14) to which the lace (L) is connected and having a fastening member (130) fastened to the inside of a receiving member (110) while rotating and restoring a control member (120), the first fastening part (100) releasing the fastened state of the fastening member (130) while rotating the control member (120) to separate it from a magnetic body (140); and
   a second fastening part (200) to which an end portion of the lace (L) passing the final connection link (14) of the footwear (10) is fit to and stackingly connected to the inside of a fixing member (210), so that the second fastening part (200) can keep a tightly fastened state of the lace while the upper end portion of the stackingly connected lace (L) pressurizes the lower end portion of the lace (L).

2. The lace fastening device according to claim 1, wherein the first fastening part (100) includes: the receiving member (110) having a body (111) inwardly dented at both side surfaces of the center thereof, the body (111) having a support piece (111a), which protrudes from a side thereof and has a through-hole (111a') to connect the lace (L) thereto, a receiving space 111b formed on the other side of the body to fasten the fastening member (130), a mounting space (111c) opened at the bottom of the body (111) to mount the control member thereon, and rotation holes (111d) formed on both sides of the mounting space (111c); the control member (120) made of a metal material, the control member (120) having a control board (121) mounted in the mounting space (111c), the control board (121) having rotary shafts (121a) formed at both sides thereof and inserted into the rotation holes (111d), control levers (121b) formed on both ends of the rotary shafts (121a) to rotate the control board (121), and a control protrusion (121c) protruding from the rear portion of the control board (121) to detachably mount the fastening member (130); the fastening member (130) fastened to the receiving space (111b) and having a fastening plate (131), the fastening plate (131) having a plurality of fastening slots (131a) to release the fastened state between the control member (120) and the fastening member (130) by an adjustment of the control protrusion (121c), support pieces (131b) protruding from both sides of the rear portion of the fastening plate 131 and respectively having through-holes (131b') for fastening the lace (L) thereto; and the magnetic body (140) mounted on the upper surface of the lower end body (111) of the receiving space (111b) to restore the control member (120), which repeatedly performs a rotation, while the fastening member (130) is fastened to the control member (120).

3. The lace fastening device according to claim 1, wherein the second fastening part (200) includes: a fixing member (210) having a hollow formed therein and a fixing hole (211) to be fixed on the top of the instep of the footwear (10); a guide space (212) formed on a side of the fixing member (210) and having a movement preventing jaw (213) for preventing movement of the lace (L) fit to a side of the fixing member (210); and a guide rod (214) disposed on the lower end portion of the guide space (212) to guide the lace (L) to the guide space (212) while surrounding the lace (L).

4. The lace fastening device according to claim 1, further comprising a third fastening part (300) which includes: a receiving member (310) having a body (311), which has a curved inner surface to be in close contact with the instep portion of the footwear (10) and has a coupling space (311a) formed by an opened inside thereof, a fixing frame (312) fixed on

the upper portion of the body 311 via a fixing screw (312a) and having a spring (313) therein, a pressurizing piece (314) fit into the fixing frame (312) and having a semicircular section, a press piece (315) joined to an end of the pressurizing piece (314) through the body (311) for pressing the pressurizing piece (314), a release piece (316) rotatably mounted between the pressurizing piece (314) and the fixing frame (312), a plate spring (317) coupled to an end portion of the release pierce (316) and operating elastically, and at least one connection link (318) formed at a side of the body to be connected with the lace (L); and a fastening member (320) inserted into the coupling space (311a) and having a plurality of retaining protrusions (321) protruding in one direction to be fastened to the release piece (316) and at least one coupling link (322) formed at a side thereof to which the lace (L) is connected.

Patentansprüche

1. Schnürsenkelbefestigungsvorrichtung für ein Schuhwerk, das von einem Nutzer derart getragen wird, dass ein Schnürsenkel (L) sich kreuzend mit Verbindungselementen (14) verbunden ist, die an einem Ristabschnitt des Schuhwerks in gleichmäßigen Abständen gegenüberliegend ausgebildet sind, umfassend
ein erstes Befestigungsteil (100), das zwischen den Verbindungselementen (14) befestigt ist, mit denen der Schnürsenkel (L) verbunden ist, und ein Befestigungselement (130) aufweist, das an der Innenseite eines Aufnahmeele-ments (110) befestigt ist, während ein Steuerelement (120) gedreht und zurückgestellt wird, wobei das erste Befestigungsteil (100) den befestigten Zu-stand des Befestigungselements (130) freigibt, während das Steuerelement (120) gedreht wird, um dieses von einem magnetischen Körper (140) zu tren-nen, und
ein zweites Befestigungsteil (200), an dem ein Endabschnitt des Schnürsen-kels (L), der durch das letzte Verbindungselement (14) des Schuhwerks (10) hindurchgeführt ist, ins Innere eines Fixierelements (210) eingeführt ist und mit diesem in einer aufeinanderliegenden Weise verbunden ist, so dass das zweite Befestigungsteil (200) einen fest verbundenen Zustand des Schnür-senkels aufrechterhalten kann, während der obere Endabschnitt des in einer aufeinanderliegenden Weise verbundenen Schnürsenkels (L) den unteren Endabschnitt des Schnürsenkels (L) mit Druck beaufschlagt.

2. Schnürsenkelbefestigungsvorrichtung gemäß Anspruch 1, wobei das erste Befestigungsteil (100) folgendes umfasst: das Aufnahmeelement (110), das einen Körper (111) aufweist, der an beiden Seitenflächen mittig eine nach in-nen gerichtete Eindellung aufweist, wobei der Körper (111) ein Stützteil (111a) aufweist, das von einer Seite desselben vorsteht und ein Durchgangsloch (111a') aufweist, um den Schnürsenkel (L) damit zu verbinden, einen Aufnahmefreiraum (111b), der an der anderen Seite des Körpers ausgebildet ist, um das Befestigungselement (130) festzusetzen, einen Befestigungsfreiraum (111c), der an dem Boden des Körpers (111) offen ist, um in diesem das Steuerelement zu befestigen, und Drehlöcher (111d), die an beiden Seiten des Befestigungsfreiraums (111c) ausgebildet sind; das Steuerelement (120), das aus einem Metallwerkstoff hergestellt ist, wobei das Steuerelement (120) eine Steuerplatte (121) aufweist, die in dem Befestigungsfreiraum (111c) montiert ist, wobei die Steuerplatte (121) Drehwellen (121a) aufweist, die an ihren beiden Seiten ausgebildet und in die Drehlöcher (111d) eingeführt sind, Steuerhebel (121b) aufweist, die an beiden Enden der Drehwellen (121a) ausgebildet sind, um die Steuerplatte (121) zu drehen, und einen Steuervorsprung (121c), der von dem hinteren Abschnitt der Steuerplatte (121) vorsteht, u m das Befestigungselement (130) lösbar zu befestigen; das Befestigungselement (130), das in dem Aufnahmefreiraum (111b) befestigt ist und eine Befestigungsplatte (131 aufweist, die eine Mehrzahl von Befestigungsschlitzen (131a aufweist, um den befestigten Zustand zwischen dem Steuerelement (120) und dem Befestigungselement (130) durch Verstellen des Steuervorsprungs (121c) zu lösen, Stützteile (131b) aufweist, die von beiden Seiten des hinteren Abschnitts der Befestigungsplatte (131) vorstehen und jeweils Durch-gangslöcher (131b') zum Befestigen des Schnürsenkels (L) an diesen aufweisen; und den magnetischen Körper (140) aufweist, der an der oberen Fläche des unteren Endkörpers (111) des Aufnahmefreiraums (111b) befestigt ist, um das Steuerelement (120), das wiederholt eine Drehung ausführt, zurückzustellen, während das Befestigungselement (130) an dem Steuerelement (120) befestigt wird.

3. Schnürsenkelbefestigungsvorrichtung gemäß Anspruch 1, wobei das zweite Befestigungsteil (200) folgendes umfasst: ein Fixierelement (210), das einen Hohlraum und ein Befestigungsloch (211) aufweist, und das an dem oberen Abschnitt der Rist des Schuhwerks (10) befestigt wird; einen Führungsfreiraum (212), der an einer Seite des Befestigungselements (210) ausgebildet ist und eine Bewegungsverhinderungsklaue (213) zur Verhinderung einer Bewegung des Schnürsenkels (L) aufweist, der an einer Seite des Befestigungselements (210) angebracht ist; und eine Führungsstange (214), die an dem unteren Endabschnitt des Führungsfreiraums (212) angeordnet ist, um den Schnürsenkel (L) zu dem Führungsfreiraum (212) zu führen, wahrend dieser den Schnürsenkel (L) umgibt.

4. Schnürsenkelbefestigungsvorrichtung gemäß Anspruch 1 ferner umfassend ein drittes Befestigungsteil (300), das folgendes aufweist:

ein Aufnahmeelement (310), das einen Körper (311) aufweist, der eine kur-venförmig verlaufende Innenfläche besitzt, die mit dem Ristabschnitt des Schuhwerks (10) in engen Kontakt stehen soll und einen Verbindungsfreiraum (311a) besitzt, der durch eine offene Innenseite desselben gebildet ist,
einen Befestigungsrahmen (312), der an dem oberen Abschnitt des Körpers (311) mittels einer Befestigungsschraube (312a) befestigt ist und in diesem eine Feder (313) besitzt,
ein Druckelement (314), das in dem Befestigungsrahmen (312) eingesetzt ist und einen halbkreisförmigen Querschnitt besitzt,
ein Anpressteil (315), das mit einem Ende des Druckelements (314) durch den Körper (311) zum Anpressen des Druckelements (314) verbunden ist,
ein Löseelement (316), das zwischen dem Drukkelement (314) und dem Be-festigungsrahmen (312) drehbar angebracht ist,
eine Blattfeder (317), die mit einem Endabschnitt des Löseelements (316) verbunden ist und elastisch wirkt,
und wenigstens ein Verbindungselement (318), das an einer Seite des Kör-pers ausgebildet ist, um mit dem Schnürsenkel (L) verbunden zu werden,
und ein Befestigungselement (320), das in den Verbindungsfreiraum (311a) eingeführt ist und eine Mehrzahl von Festsetzvorsprüngen (321) aufweist, die zur Verbindung mit dem Löseelement (316) in einer Richtung vorstehen,
und wenigstens ein Verbindungselement (322), das an einer Seite desselben ausgebildet ist, mit der der Schnürsenkel (L) verbunden ist.

Revendications

1. Dispositif pour attacher des lacets d'une chaussure portée par un utilisateur de manière à ce qu'un lacet (L) soit attaché en croix sur des oeillets (14) se faisant face à intervalles réguliers sur une partie du coup de pied de la chaussure comprenant :

une première partie d'attache (100) attachée entre les oeillets (14) auxquels le lacet (L) est relié et ayant un élément d'attache (130) attaché à l'intérieur d'un élément de réception (110) tout en tournant et en rétablissant un élément de contrôle (120), la première partie d'attache (100) dégageant l'état attaché de l'élément d'attache (130) tout en tournant l'élément de contrôle (120) pour le séparer d'un corps magnétique (140) ; et
une deuxième partie d'attache (200) à laquelle une extrémité du lacet (L) passant le dernier oeillet (14) de la chaussure (10) est adaptée et reliée par superposition à l'intérieur d'un élément de fixation (210) de manière à ce que le deuxième élément d'attache (200) puisse conserver un état bien serré du lacet alors que l'extrémité supérieure du lacet (L) relié par superposition fait pression sur la partie inférieure du lacet (L).

2. Dispositif pour attacher des lacets selon la revendication 1, dans lequel la première partie d'attache (100) comprend : l'élément de réception (110) ayant un corps (111) denté vers l'intérieur sur les deux surfaces adjacentes à son centre, le corps 111) ayant une pièce de support (111a) faisant saillie d'un côté dudit corps et ayant un trou de passage (111a') pour y relier le lacet (L), un espace de réception (111b) formé de l'autre côté du corps pour attacher l'élément d'attache (130), un espace de montage (111c) ouvert au fond du corps (111) pour y monter l'élément de contrôle et des trous de rotation (111d) formés sur les deux côtés de l'espace de montage (111c) ; l'élément de contrôle (120) composé d'une matière métallique, l'élément de contrôle (120) ayant une plaque de contrôle (121) montée dans l'espace de montage (111c), la plaque de contrôle (121) ayant des tiges rotatives (121a) formées des deux côtés de ladite plaque et insérées dans les trous de rotation (111d), des leviers de contrôle (121b) formés sur les deux extrémités des tiges rotatives (121a) pour faire tourner la plaque de contrôle (121) et une saillie de contrôle (121c) faisant saillie de la partie arrière de la plaque de contrôle (121) pour monter l'élément d'attache (130) de manière amovible ; l'élément d'attache (130) fixé à l'espace de réception (111b) et ayant une plaque d'attache 131), la plaque d'attache (131) ayant une pluralité de fentes d'attache (131a) pour dégager l'état attaché entre l'élément de contrôle (120) et l'élément d'attache (130) par un ajustement de la saillie de contrôle (121c) , des pièces de support (131b) faisant saillie des deux côtés de la partie arrière de la plaque d'attache (131) et ayant respectivement des trous traversants (131b') pour y attacher le lacet (L) ; et le corps magnétique (140) monté sur la surface supérieure du corps d'extrémité inférieure (111) de l'espace de réception (111b) pour restituer l'élément de contrôle (120) qui effectue une rotation de manière répétée pendant que l'élément d'attache (130) est attaché à l'élément de contrôle (120).

3. Dispositif pour attacher des lacets selon la revendication 1, dans lequel la deuxième partie d'attache (200) comprend : un élément de fixation (210) com-

portant un creux et un trou de fixation (211) devant être fixé en haut du coup de pied de la chaussure (10) ; un espace de guidage (212) formé sur un côté de l'élément de fixation (210) et ayant un mouvement empêchant la mâchoire (213) d'empêcher le mouvement du lacet (L) adapté à un côté de l'élément de fixation (210) ; et une tige de guidage (214) disposée sur l'extrémité inférieure de l'espace de guidage (212) pour guider le lacet (L) vers l'espace de guidage (212) tout en entourant le lacet (L).

4. Dispositif pour attacher des lacets selon la revendication 1, comprenant de plus une troisième partie d'attache (300) qui comporte : un élément de réception (310) ayant un corps (311) présentant une surface intérieure recourbée devant être en contact étroit avec la partie du coup de pied de la chaussure (10) et ayant un espace de couplage (311a) formé par une partie intérieure ouverte dudit corps, un cadre de fixation (312) fixé sur la partie supérieure du corps (311) via une vis de fixation (312a) et comprenant un ressort (313), une pièce de mise en pression (314) adaptée dans le cadre de fixation (312) et ayant une section semi-circulaire, une pièce de compression (315) reliée à une extrémité de la pièce de mise en pression (314) par le corps (311) pour faire pression sur la pièce de mise en pression (314), une pièce de dégagement (316) montée en rotation entre la pièce de mise en pression (314) et le cadre de fixation (312), un ressort plat (317) couplé à une extrémité de la pièce de dégagement (316) et fonctionnant de manière élastique et au moins un oeillet (318) formé sur un côté du corps pour être relié au lacet (L) ; et un élément d'attache (320) inséré dans l'espace de couplage (311a) et ayant une pluralité de saillies de retenue (321) faisant saillie dans une direction pour être attachées à la pièce de dégagement (316) et au moins un lien de couplage (322) formé sur un côté correspondant auquel le lacet (L) est relié.

Fig. 1

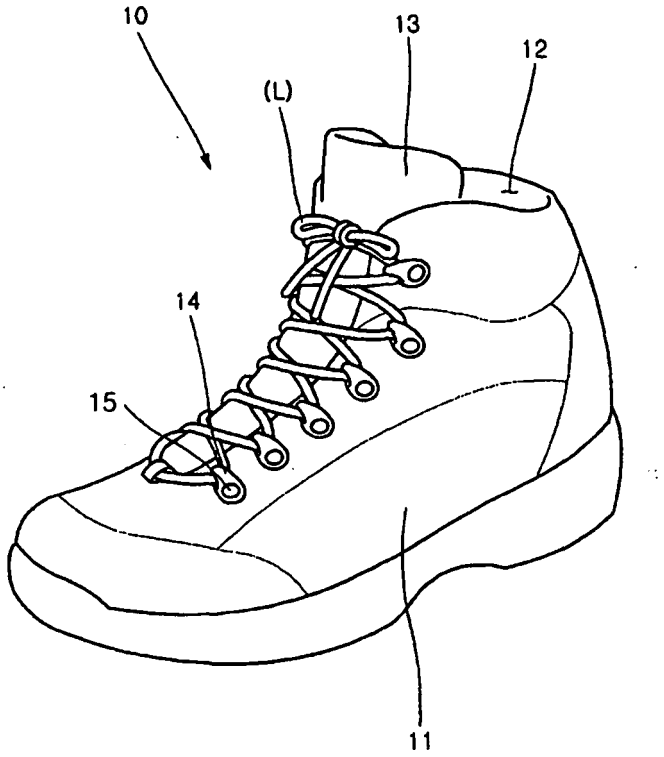


Fig. 2

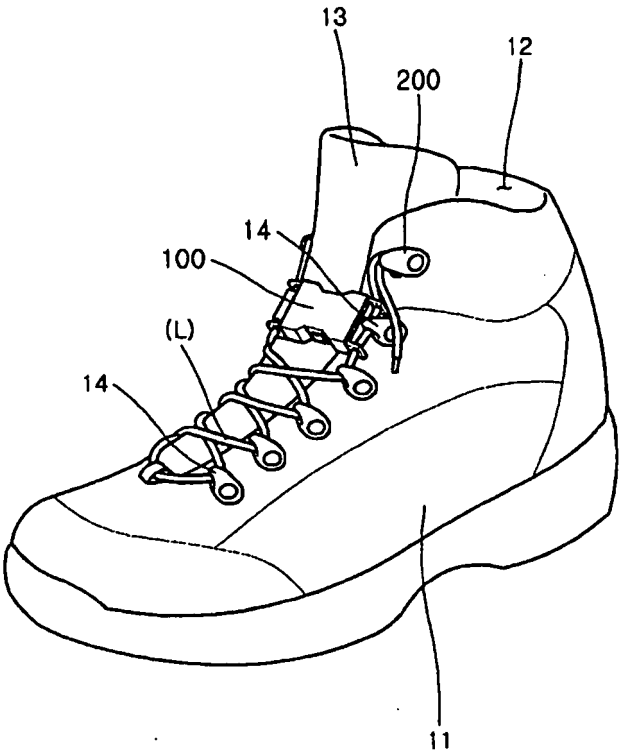


Fig. 3

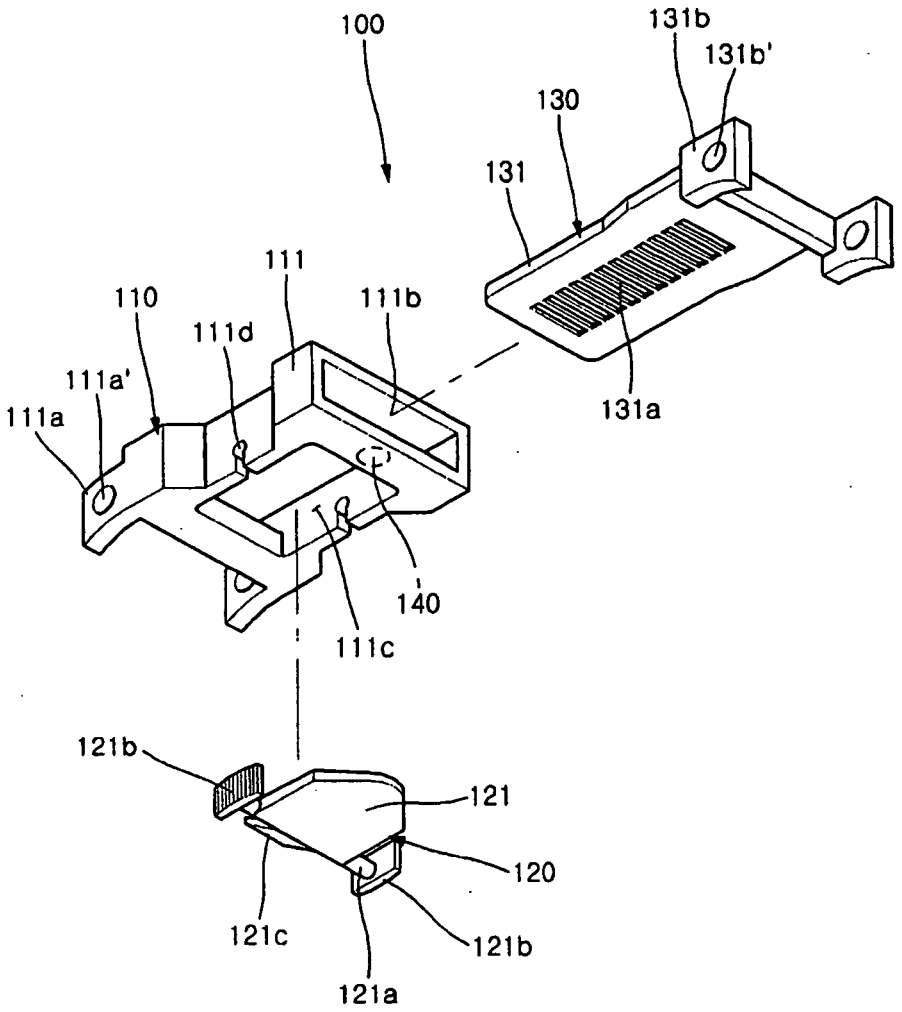

100
131b
131b'
130
131
111
110
111b
111d
111a'
111a
131a
140
111c
121b
121
120
121c
121b
121a

Fig. 4

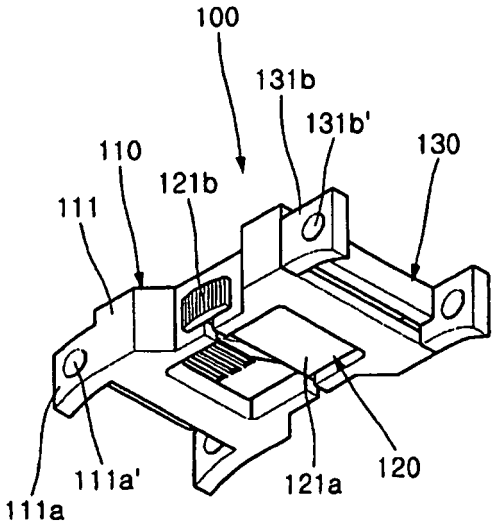


Fig. 5a

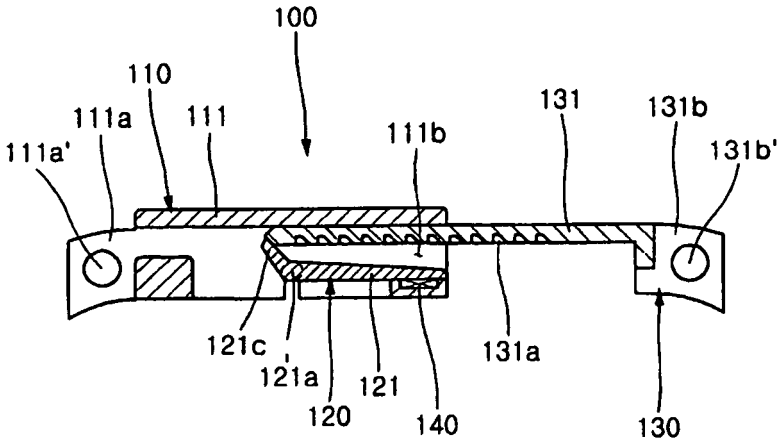

100
110
111a
111
111a'
111b
131
131b
131b'
121c
121a
121
120
140
131a
130

Fig. 5b

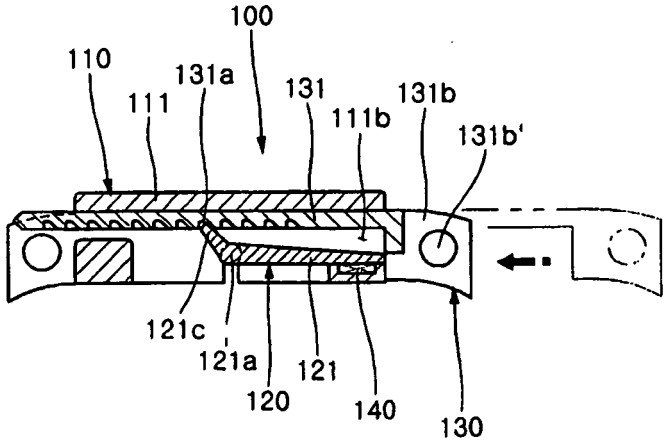

100
110
131a
111
131
131b
111b
131b'
121c
121a
121
120
140
130

Fig. 5c

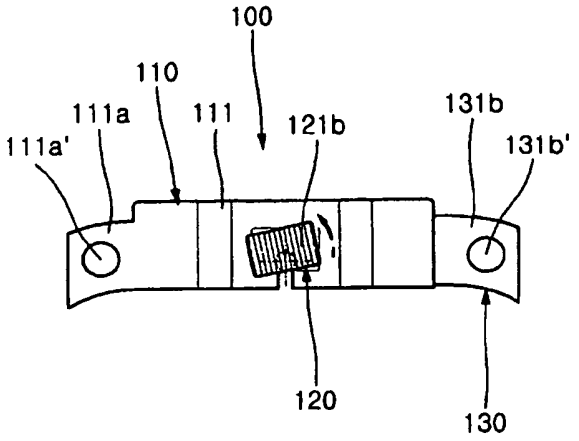

100
110
111a
111
121b
131b
111a'
131b'
120
130

Fig. 5d

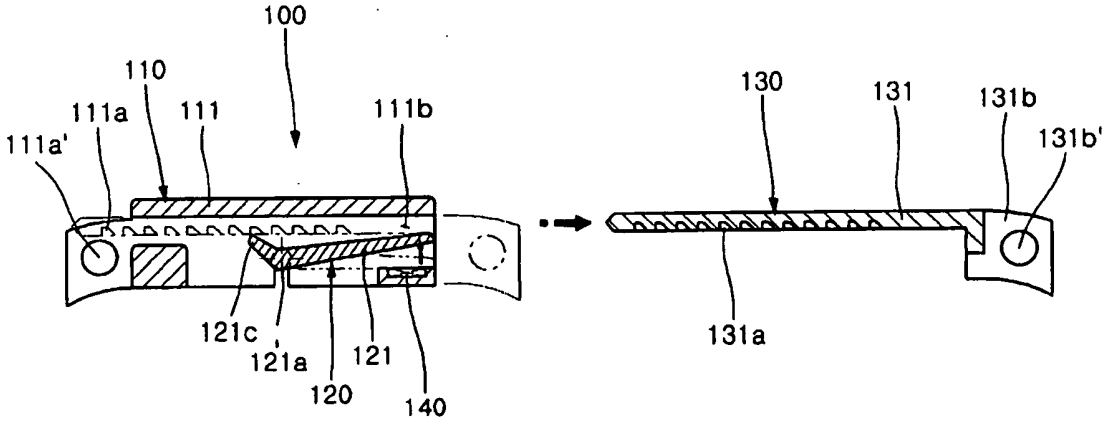

100
110
111a
111
111b
111a'
130
131
131b
131b'
121c
121a
121
120
140
131a

Fig. 6

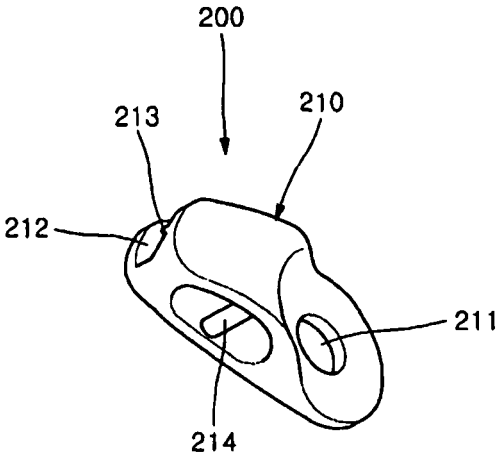


Fig. 7

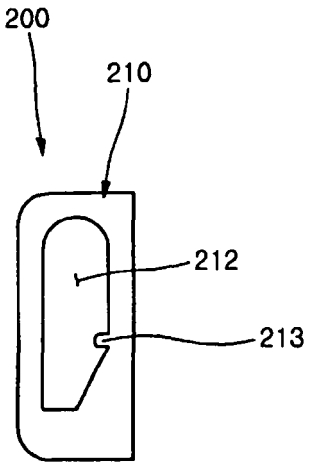


Fig. 8a

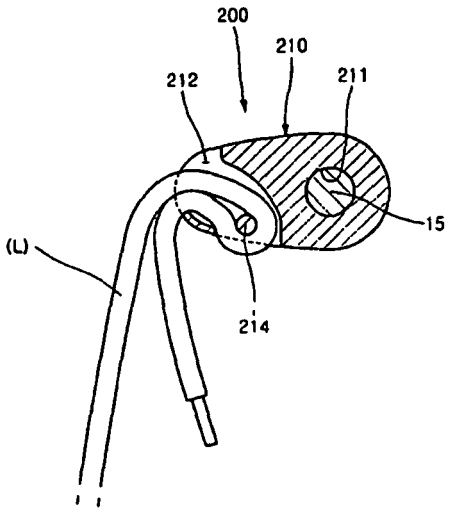


Fig. 8b

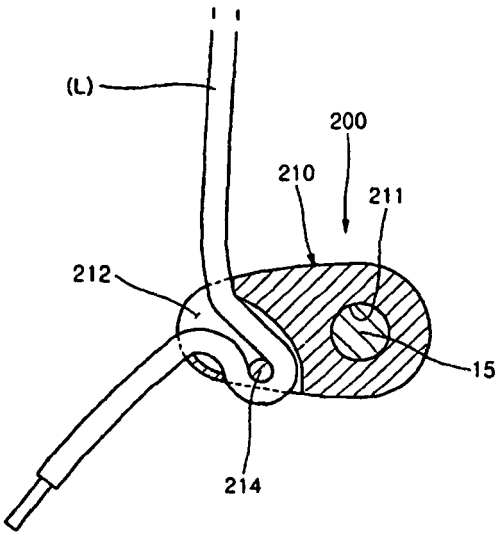


Fig. 9

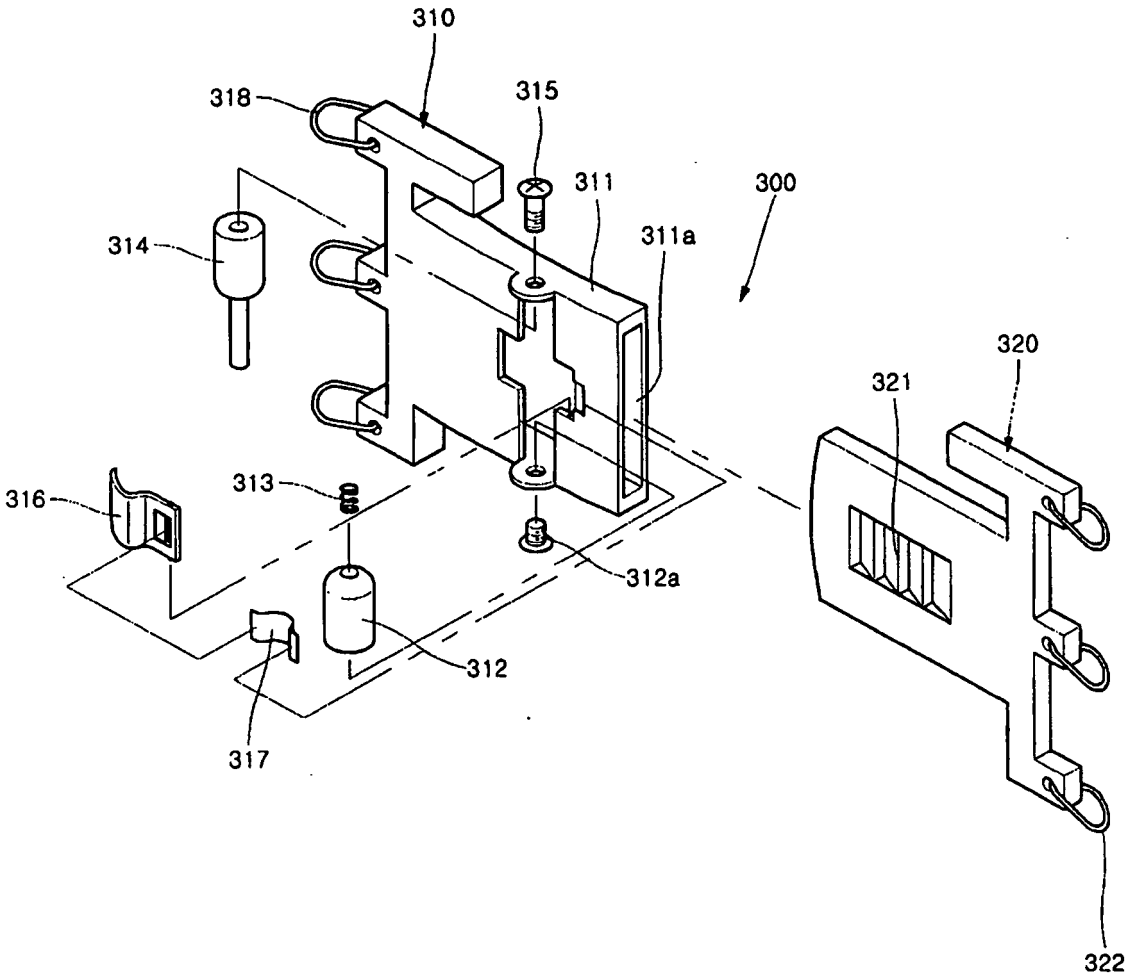


Fig. 10

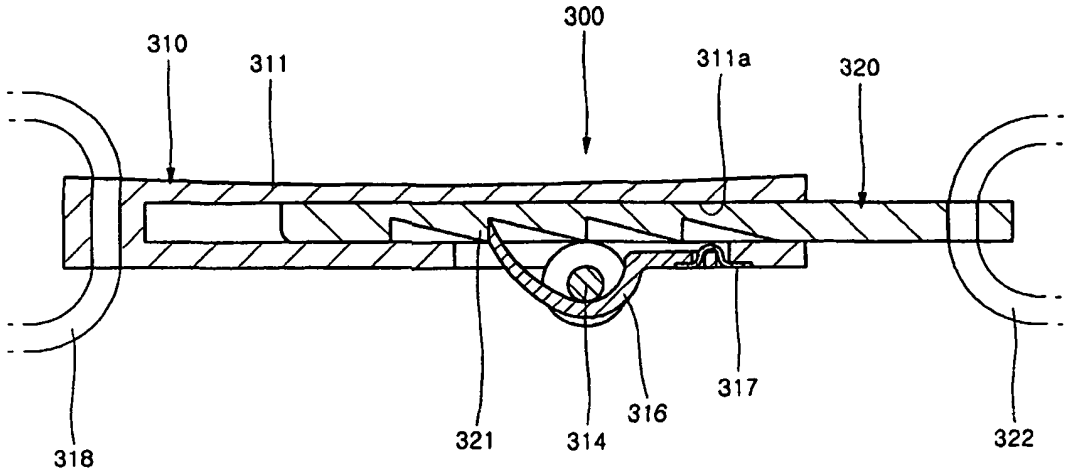
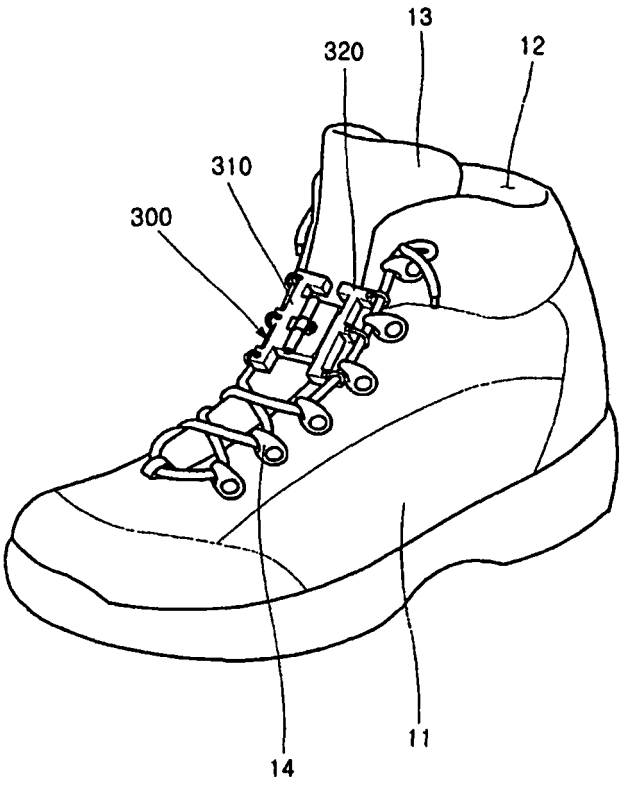


Fig. 11



REFERENCES CITED IN THE DESCRIPTION

This list of references cited by the applicant is for the reader's convenience only. It does not form part of the European patent document. Even though great care has been taken in compiling the references, errors or omissions cannot be excluded and the EPO disclaims all liability in this regard.

Patent documents cited in the description

- KR 200409510 Y1 **[0005]**