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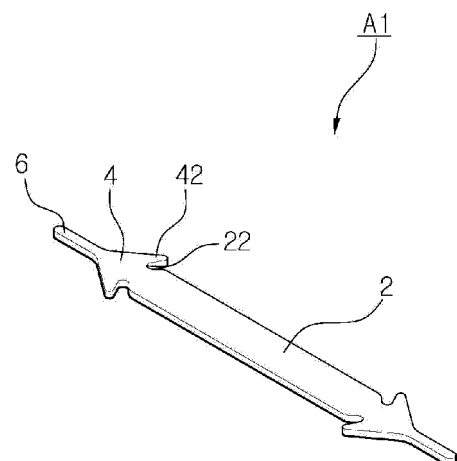
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(54) **LACING SYSTEM FOR SHOE**

(57) A lacing system for a shoe is disclosed. The lacing system for a shoe, according to the present invention, is a lacing system utilized for tying purposes so as to be coupled to string lacing eyelets of a dress shoe or a sneaker such that a shoe is firmly worn on the foot, and the lacing system for a shoe comprises: a body having elasticity; and hook portions which are respectively formed on both end portions of the body, and which are fastened by being inserted into the string coupling holes. Accordingly, the hook portions formed on both ends of the elastic body are coupled by being inserted and hooked into the string lacing eyelets when a dress shoe or a sneaker is worn such that the body is firmly fastened so as to prevent untying, and since the simple lacing of a shoe is possible, it is not necessary to tie a string knot as in conventional methods so as to provide ease of use and to enable a user to quickly put on shoes.

**【FIG. 1】**



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## Description

### TECHNICAL FIELD

[0001] The present invention relates to a footwear fastening structure. More particularly, the present invention relates to a footwear fastening structure which is used in replacement of a shoelace of shoes or footwear, eliminates the necessity for tying or untying a shoelace, and prevents the shoelace from being loosened, thereby improving an convenience in use.

### BACKGROUND ART

[0002] In general, a shoelace member mostly has a circular or elliptical cross-section and is woven in a straight line.

[0003] Such a conventional shoelace member entails a problem in that after the shoelace member is tied or knotted, it is easily untied or loosened of itself due to shaking caused by motion of a user's ankle while he or she is walking.

[0004] Numerous prior arts have been proposed in an attempt to prevent the shoelace member from being easily untied. As one example, Korean Utility Model Laid-Open Publication No. 96-19744 (hereinafter, referred to as "prior art 1") discloses a shoelace member that is not easily untied.

[0005] The prior art 1, however, encounters a problem in that the shoelace member has a plurality of resin projections attached to the top and bottom surfaces thereof at its entirety, thus making it difficult to manufacture and increasing the manufacturing cost.

[0006] Besides the above prior art 1, various prior arts have been proposed in an attempt to prevent the shoelace member from being easily loosened. For example, Korean Utility Model Registration No. 0451160 (discloses (hereinafter, referred to as "prior art 2") discloses a device for preventing a shoelace knot from being untied.

[0007] The prior art 2 will be described hereinafter. The device of the prior art 2 includes: a shoelace knot loosening-preventive member 21 that is securely fixed at both ends to the top surface of a shoe tongue 11 of a shoe or footwear in the longitudinal direction of the shoe so as to allow a knot of the shoelace tightened on the shoe to be brought into close contact with the shoe tongue to prevent the shoelace knot from being untied due to motion of a user's ankle; a shoelace fixing member 22 fixed to the top surface of the shoe tongue, the shoelace fixing member having an insertion groove for allowing the shoelace knot loosening-preventive member to be inserted thereto in a transverse direction and an elastic member for securely fixing the shoelace knot loosening-preventive member inserted into the insertion groove using an elastic force; and a button member 23 coupled to the upper portion of the shoelace fixing member so that when the button member is pressed downwardly, the elastic member is pressurized to cause the shoelace knot loosening-pre-

ventive member to be released from its fixed state.

[0008] However, the prior arts 1 and 2 still involve problems in that since a shoelace loosening-preventive structure for tying the shoelace member is complicated, the number of the manufacturing processes is increased, and in that it is required that the shoelace should be tieably engaged in all the shoelace tying holes or eyelets and then be lastly knotted, thus making the knotting process inconvenient.

### DISCLOSURE

### TECHNICAL PROBLEM

[0009] Accordingly, the present invention has been made to solve the aforementioned problem occurring in the prior art, and it is an object of the present invention to provide a footwear fastening structure configured such that it can be used in replacement of a shoelace applied to shoes or sports shoes, can be simply and easily engaged in shoelace tying holes at both ends thereof in such a manner as to be hookedly fit into the shoelace tying holes, and can represent various colors and patterns to implement the refined beauty of an external appearance.

### TECHNICAL SOLUTION

[0010] To accomplish the above object, in accordance with the present invention, there is provided a footwear fastening structure configured such that it is tieably engaged in shoelace tying holes or eyelets of a shoe or a sports shoe so as to fasten the shoe or the sports shoe tightly on a user's foot when he or she wears the shoe, the footwear fastening structure comprising: a main body having a predetermined length and flexibility, the main body being formed in a wide flat plate shape, and a pair of opposed stopper units formed at both ends of the main body, respectively, so as to be fixedly inserted into the shoelace tying holes in such a manner as to pass through the shoelace tying holes and then to be hooked in the shoelace tying holes.

[0011] Each of the stopper units is made of a material the same as that of the main body or a material having a hardness higher than that of the main body.

[0012] Each of the stopper units is formed in an arrow shape which is gradually tapered toward a distal end thereof to form a sharpened distal end, and has projections formed at both side ends thereof in such a manner that a distance between the both projections is larger than the inner diameter of each shoelace tying hole.

[0013] A narrow portion is formed at the connection part between the main body and each of the stopper units, the narrow portion having a width that is smaller than that of the main body and is equal to or smaller than the inner diameter of each shoelace tying hole.

[0014] A withdrawing tap is formed at the sharpened front end of each of the stopper units so as to have a

predetermined length, the withdrawing tap being configured to be removed by cutting.

**[0015]** A cutting line is formed at the connecting part between the withdrawing tap and the stopper unit.

**[0016]** Each of the stopping units is formed in any one shape selected from among a circular shape, an elliptical shape, a spade shape, and a heart shape.

### ADVANTAGEOUS EFFECT

**[0017]** The footwear fastening structure in accordance with the present invention as constructed above has the following advantages.

**[0018]** When a user wears a shoe or a sports shoe, the stopper units formed both ends of the main body having flexibility are engaged in the shoelace tying holes in such a manner as to be hookedly fit into the shoelace tying holes so that the main body can be firmly fixed to the shoe tongue to prevent the footwear fastening structure from being loosened. In addition, since the shoe can be simply and conveniently fastened tightly on the user's foot, the necessity for tying the knot of the shoelace is eliminated, thereby improving a convenience in use and ensuring a rapid wearing of the footwear unlike the conventional prior art.

**[0019]** Moreover, since the shape of the stopper unit and the color of the main body can be modified in various manners, the beauty of an external appearance of the footwear fastening structure is excellent so that the user can selectively apply the footwear fastening structure to the footwear according to personal taste, and can use the footwear fastening structure for a long period of time owing to high durability. Further, when the user puts on or off his or her shoes, and is walking or running, the footwear fastening structure is very convenient.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0020]** The above objects, other features and advantages of the present invention will become more apparent by describing the preferred embodiments thereof with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view showing a footwear fastening structure according to an embodiment of the present invention;

FIG. 2 is a view showing an example of the stepwise application of a footwear fastening structure according to an embodiment of the present invention to a shoe;

FIG. 3 is a perspective view showing a shoe to which a footwear fastening structure according to an embodiment of the present invention is applied;

FIG. 4 is a top plan view showing a footwear fastening structure according to another embodiment of

the present invention;

FIG. 5 is a perspective view showing a footwear fastening structure according to another embodiment of the present invention; and

FIG. 6 is a partial top plan view showing a footwear fastening structure according to another embodiment of the present invention.

\*Explanation on reference numerals of main elements in the drawings \*

2: main body	4: stopper unit
6: withdrawing tap	22: narrow portion
42: projection	100: shoe
110: shoelace tying hole	

### PREFERRED EMBODIMENTS OF THE INVENTION

**[0021]** Now, preferred embodiments of the present invention will be described in detail with reference to the accompanying drawings. The matters defined in the description, such as the detailed construction and elements, are nothing but specific details provided to assist those of ordinary skill in the art in a comprehensive understanding of the invention, and the present invention is not limited to the embodiments disclosed hereinafter.

**[0022]** In the drawings, for the sake of a clearer understanding of the present invention, sizes or shapes of elements illustrated in the drawings may be exaggerated for clarity and convenience of explanation. Also, the following terms particularly defined in consideration of the configuration and function of the present invention may vary according to an intention of a user or an operator or according to custom. Therefore, definition of such terms should be made based on overall contents of the specification.

[First Embodiment]

**[0023]** FIG. 1 is a perspective view showing a footwear fastening structure according to an embodiment of the present invention, FIG. 2 is a view showing an example of the stepwise application of a footwear fastening structure according to an embodiment of the present invention to a shoe, FIG. 3 is a perspective view showing a shoe to which a footwear fastening structure according to an embodiment of the present invention is applied, and FIG. 4 is a top plan view showing a footwear fastening structure according to another embodiment of the present invention.

**[0024]** As shown in FIGs. 1 to 4, a footwear fastening structure A1 according to the present invention is configured such that it is tieably engaged in shoelace tying holes or eyelets 110 of a shoe or a sports shoe 100 so as to fasten the shoe or the sports shoe tightly on a user's

foot when he or she wears the shoe. The footwear fastening structure includes: a main body 2 having a predetermined length and flexibility, the main body being formed in a wide flat plate shape, and a pair of opposed stopper units formed at both ends of the main body 2, respectively, so as to be fixedly inserted into the shoelace tying holes 110 in such a manner as to pass through the shoelace tying holes and then to be hooked in the shoelace tying holes.

**[0025]** The main body 2 is formed in a wide flat plate shape having a predetermined length using a material harmless to the human body and having flexibility

**[0026]** In addition, a distance between the shoelace tying holes 110 formed at both sides of an upper of the shoe is typically determined substantially uniformly and is increased gradually as it goes toward the ankle from the top side of the foot. Thus, in view of this, the main body 2 is manufactured uniformly of various kinds, from a short one to a long one.

**[0027]** The shoelace tying holes 110 are formed by perforating both sides of an upper of a shoe symmetrically so that a shoelace can be tieably engaged in the shoelace tying holes. Rivets may be fixedly engaged in the shoelace tying holes 110 to improve durability.

**[0028]** A pair of opposed stopper units 4 is formed at both ends of the main body 2, and can be made of a material the same as that of the main body 2 or a material having a hardness higher than that of the main body 2.

**[0029]** Thus, the main body 2 is made of rubber or silicone having flexibility, but the stopper units 4 are made of a rigid synthetic resin material. As such, the footwear fastening structure is formed by subjecting dissimilar materials to a composite molding process.

**[0030]** The stopper unit 4 is formed in any one shape selected from among a circular shape, an elliptical shape, a spade shape, a heart shape, and an arrow shape.

**[0031]** Preferably, the stopper unit 4 is formed in an arrow shape which is gradually tapered toward a distal end thereof to form a sharpened distal end, and has projections 42 formed at both side ends thereof in such a manner that a distance between the both projections is larger than the inner diameter of each shoelace tying hole 110 as shown in the drawings.

**[0032]** Preferably, a narrow portion 22 is formed at the connection part between the main body 2 and each of the stopper units 4. In this case, the narrow portion has a width that is smaller than that of the main body 2 and is equal to or smaller than the inner diameter of each shoelace tying hole 110.

**[0033]** Thus, the stopper unit 4 passes through the shoelace tying hole 110, and then is hookedly fit into the inner circumferential surface of the shoelace tying hole 110.

**[0034]** A withdrawing tap 6 is formed at the sharpened front end of each of the stopper units 4 so as to have a predetermined length so that a user easily pulls the withdrawing tap outwardly with his or her fingers.

**[0035]** In other words, when the user pulls the with-

drawing tap 6 outwardly while gripping the withdrawing tap with his or her fingers, the stopper unit 4 can rapidly pass through the shoelace tying hole 110.

**[0036]** After the stopper unit 4 passes through the shoelace tying hole 110, the withdrawing tap 6 is removed by cutting. In this case, the withdrawing tap 6 is cut out by a knife or scissors.

**[0037]** In addition, a cutting line (not shown) may be formed at the connecting part between the withdrawing tap 6 and the stopper unit 4. The cutting line is formed by perforating the connection part between the withdrawing tap 6 and the stopper unit 4 in a dotted line shape so that the cutting line is easily cut out. Therefore, when the withdrawing tap 6 is forcibly pulled from one side to the other side, the cutting line is cut out so that the withdrawing tap can be easily removed even without a separate cutting tool.

**[0038]** A use example of the footwear fastening structure according to an embodiment of the present invention as constructed above will be described hereinafter.

**[0039]** First, a user passes the withdrawing tap 6 of the stopper unit 4 through the shoelace tying hole 110 and then forcibly pulls the withdrawing tap 6 outwardly while gripping it with his or her fingers so as to allow the stopper unit to completely pass through the shoelace tying hole 110 so that the narrow portion 22 is hookedly fit into the shoelace tying hole 110.

**[0040]** The stopper unit 4 at an opposite side is also caused to pass through and to be engaged in the shoelace tying hole 110 in the above-mentioned manner.

**[0041]** Then, the withdrawing tap 6 is cut out to be removed.

**[0042]** When the stopper unit 4 passes through the shoelace tying hole 110, the projections 42 formed at both side ends of the stopper unit 4 is hooked on the outer circumferential edge of the shoelace tying hole 110. Thus, although a force pulling the main body 2 outwardly (i.e., a force with which the top side of the foot pushes the main body 2 when a user is walking or running) is exerted onto the stopper unit 4, the stopper units 4 at both sides of the upper of the shoe is maintained in a fixed state so that the stopper units 4 do not easily escape from the shoelace tying holes 110 but can be stably maintained in a tied state.

[Second Embodiment]

**[0043]** Meanwhile, FIG. 5 is a perspective view showing a footwear fastening structure according to another embodiment of the present invention, and FIG. 6 is a partial top plan view showing a footwear fastening structure according to another embodiment of the present invention.

**[0044]** As shown in FIGs. 5 and 6, a footwear fastening structure A2 according to the present invention is configured such that it is tieably engaged in shoelace tying holes or eyelets 110 of a shoe or a sports shoe 100 so as to fasten the shoe or the sports shoe tightly on a user's

foot when he or she wears the shoe. The footwear fastening structure includes: a main body 2b having a predetermined length and flexibility, the main body being formed in a wide flat plate shape, and a pair of opposed stopper units 4b formed at both ends of the main body 2b, respectively, so as to be fixedly inserted into the shoelace tying holes 110 in such a manner as to pass through the shoelace tying holes 110 and then to be hooked in the shoelace tying holes.

[0045] Each of the stopper units 5b is formed in an arc shape at a front portion thereof, and is gradually tapered toward both side ends thereof to form sharpened hooks 43b at both side ends thereof, and a distance between the sharpened hooks 43b is larger than a width of the main body 2b.

[0046] A narrow portion 22b is formed at the connection part between the main body 2b and each of the stopper units 4b. In this case, the narrow portion 22b has a width that is smaller than that of the main body 2b and is equal to or smaller than the inner diameter of each shoelace tying hole 110.

[0047] Herein, a core material (not shown) may be embedded in the connection part between the main body 2b and the stopper unit 4b to reinforce the strength of the footwear fastening structure to prevent the connection part from being torn out.

[0048] A use example of the footwear fastening structure according to another embodiment of the present invention as constructed above will be described herein after.

[0049] First, when a user forms the sharpened hooks 43b at both side ends of the stopper unit 4 in a roll shape by slightly folding the hooks 43b inwardly, and then passes the rolled hooks 43b through the shoelace tying hole 110, the narrow portion 22b is hookedly fit into the shoelace tying hole 110 and the rolled hooks 43b simultaneously returns to its original state to cause the rolled hooks 43b to be unfolded so that the hooks 43b can be hooked in the shoelace tying hole 110 so to be maintained in a hooked state.

[0050] While the present invention has been described in connection with the specific embodiments illustrated in the drawings, they are merely illustrative, and the invention is not limited to these embodiments. It is to be understood that various equivalent modifications and variations of the embodiments can be made by a person having an ordinary skill in the art without departing from the spirit and scope of the present invention. Therefore, the true technical scope of the present invention should not be defined by the above-mentioned embodiments but should be defined by the appended claims and equivalents thereof.

## INDUSTRIAL APPLICABILITY

[0051] As described above, footwear fastening structure according to the present invention as constructed above can be used in replacement of a shoelace applied

to shoes or sports shoes.

## Claims

1. A footwear fastening structure configured such that it is tieably engaged in shoelace tying holes or eyelets of a shoe or a sports shoe so as to fasten the shoe or the sports shoe tightly on a user's foot when he or she wears the shoe, the footwear fastening structure comprising:

a main body having a predetermined length and flexibility, the main body being formed in a wide flat plate shape, and

a pair of opposed stopper units formed at both ends of the main body, respectively, so as to be fixedly inserted into the shoelace tying holes in such a manner as to pass through the shoelace tying holes and then to be hooked in the shoelace tying holes.

2. The footwear fastening structure according to claim 1, wherein each of the stopper units is made of a material the same as that of the main body or a material having a hardness higher than that of the main body.

3. The footwear fastening structure according to claim 1, wherein each of the stopper units is formed in an arrow shape which is gradually tapered toward a distal end thereof to form a sharpened distal end, and has projections formed at both side ends thereof in such a manner that a distance between the both projections is larger than the inner diameter of each shoelace tying hole.

4. The footwear fastening structure according to claim 1, a narrow portion is formed at the connection part between the main body and each of the stopper units, the narrow portion having a width that is smaller than that of the main body and is equal to or smaller than the inner diameter of each shoelace tying hole.

5. The footwear fastening structure according to claim 1, a withdrawing tap is formed at the sharpened front end of each of the stopper units so as to have a predetermined length, the withdrawing tap being configured to be removed by cutting.

6. The footwear fastening structure according to claim 1, wherein a cutting line is formed at the connecting part between the withdrawing tap and the stopper unit.

7. The footwear fastening structure according to claim 1, wherein each of the stopping units is formed in any one shape selected from among a circular

shape, an elliptical shape, a spade shape, and a heart shape.

8. The footwear fastening structure according to claim 1, wherein each of the stopper units is formed in an arc shape at a front portion thereof, and is gradually tapered toward both side ends thereof to form sharpened hooks at both side ends thereof, a distance between the sharpened hooks being larger than a width of the main body.
9. The footwear fastening structure according to claim 8, wherein a narrow portion is formed at the connection part between the main body and each of the stopper units, the narrow portion having a width that is smaller than that of the main body and is equal to or smaller than the inner diameter of each shoelace tying hole.

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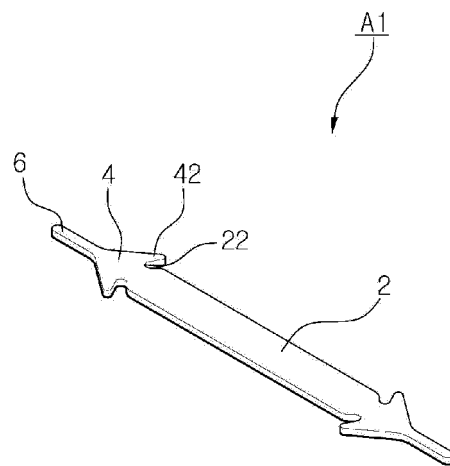
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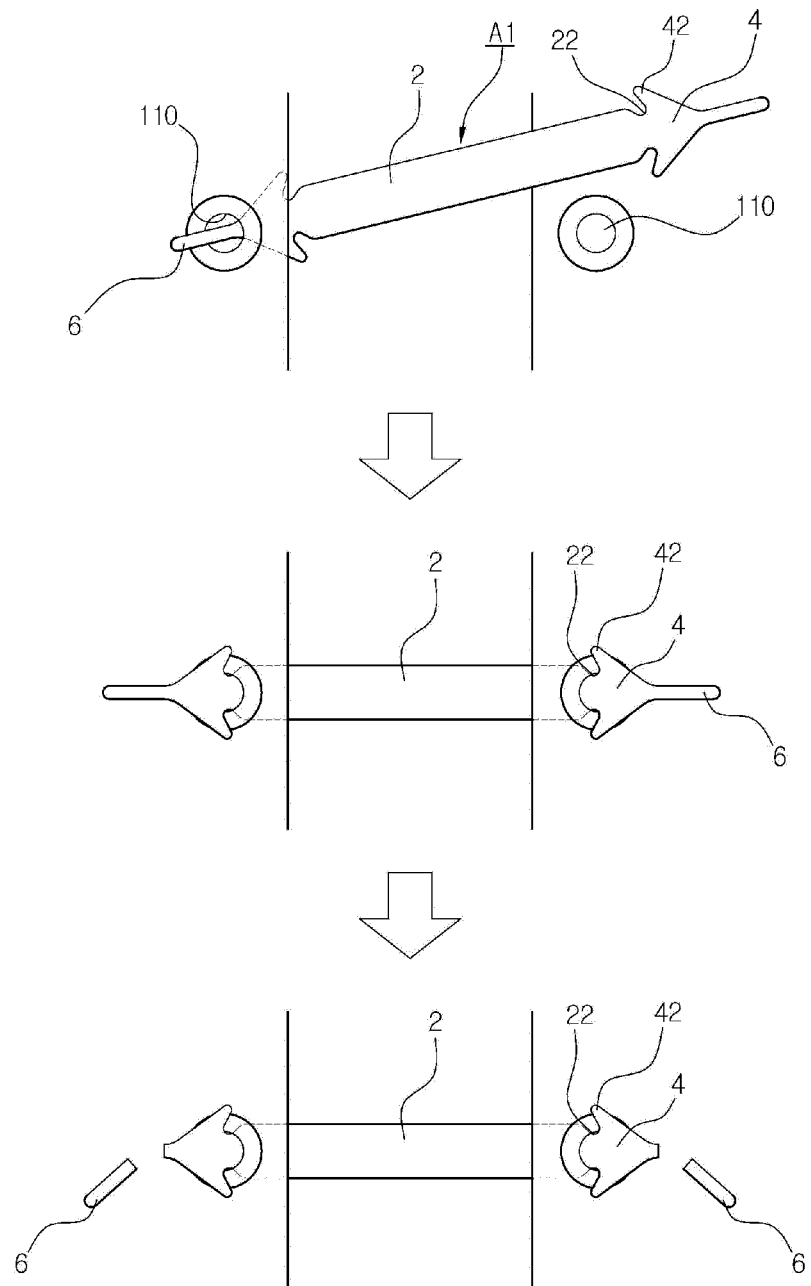
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【FIG. 1】

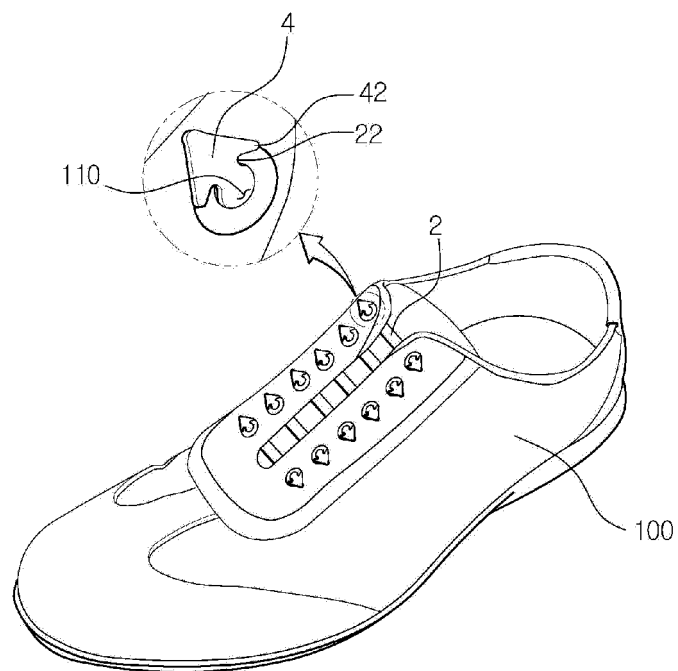


【FIG. 2】

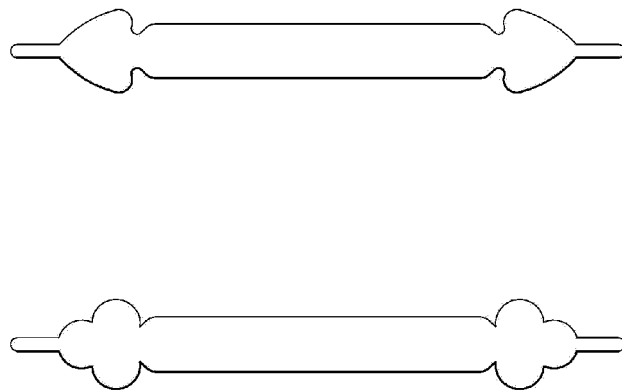




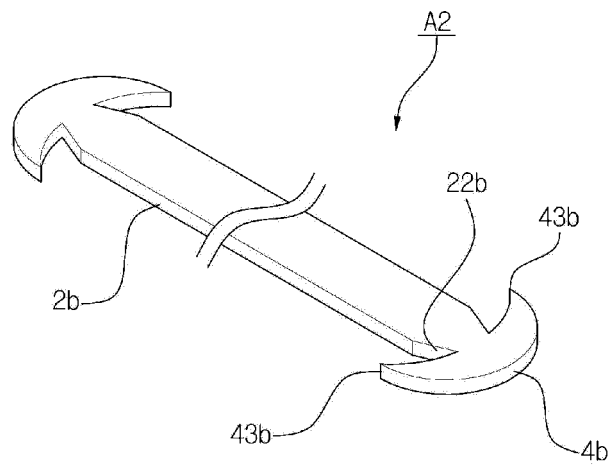
【FIG. 3】



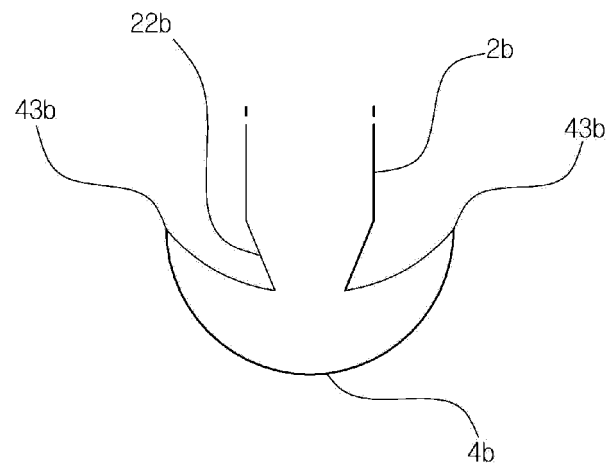
【FIG. 4】



【FIG. 5】



【FIG. 6】



## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2014/006984

## A. CLASSIFICATION OF SUBJECT MATTER

*A43C 11/22(2006.01)i, A43C 11/12(2006.01)i*

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

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A43C 11/22; A43C 11/00; A43B 23/02; A43C 1/02; A43C 11/24; A43C 1/04; A43C 9/06; A43C 11/12

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

Korean Utility models and applications for Utility models: IPC as above

Japanese Utility models and applications for Utility models: IPC as above

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

eKOMPASS (KIPO internal) &amp; Keywords: shoes, linkage, string, elasticity, lock, tap, loose stopping

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 3165710 U (KUDOS CO., LTD. et al.) 03 February 2011 See abstract; paragraphs [0009]-[0011]; figures 5 and 6.	1-9
A	KR 10-2010-0106270 A (SHOETURE) 01 October 2010 See abstract; paragraphs [0016]-[0029]; figure 1.	1-9
A	KR 20-2011-0004677 U (Hong, Jong Chul) 12 May 2011 See abstract; paragraphs [0022]-[0047]; figure 1.	1-9
A	KR 20-0306985 Y1 (LEE, Jong Kyung) 15 March 2003 See abstract; pages 4 and 5; figures 1-3.	1-9
A	KR 10-0886105 B1 (JO, Yeon Ku) 27 February 2009 See abstract; paragraphs [30]-[48]; figures 1-5.	1-9

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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Date of the actual completion of the international search

10 November 2014 (10.11.2014)

Date of mailing of the international search report

10 November 2014 (10.11.2014)

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INTERNATIONAL SEARCH REPORT  
Information on patent family members

International application No.

PCT/KR2014/006984

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KR 10-0886105 B1	27/02/2009	NONE	

Form PCT/ISA/210 (patent family annex) (July 2009)

**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

- KR 9619744 [0004]
- KR 0451160 [0006]