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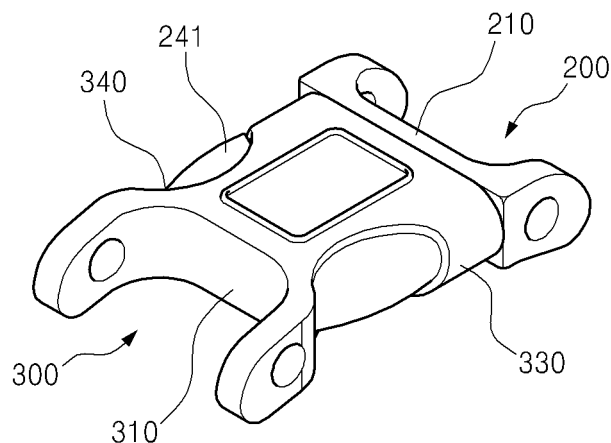
(54) **BUCKLE HAVING EASY SEPARATION OPERATION**

(57) A buckle includes a male buckle member and a female buckle member. The male buckle member has: a male buckle body having a first coupler at a first end; a guide formed at a second end of the male buckle body and having a first guide surface; and an elastic arm formed at the second end of the male buckle body at a predetermined distance from the guide, being bendable toward the guide, and having a projection and a second

guide surface. The female buckle member has: a female buckle body having a second coupler at a first end; a housing formed at a second end of the female buckle body and having a space for receiving the guide and the elastic arm; and a side hole formed to secure the projection of the elastic arm when the guide and the elastic arm are inserted in the space.

FIG. 1

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Description

Technical Field

[0001] The present invention relates to a buckle for bags, clothes, and shoes, etc. to fasten desired objects such as a belt, a waist belt, and a shoelace. More particularly, it relates to a buckle having an easily releasable structure in which a female buckle member and male buckle member, which are separably secured to each other, can be simply separated.

Background Art

[0002] In general, buckles, which are found on products such as bags, clothes, and shoes, are devices for fastening both ends of a strap or ends of two straps such as belts, waist belts, and shoelaces.

[0003] Existing buckles have a pair of releasable male buckle member and female buckle member.

[0004] That is, in order to couple the male buckle member and the female buckle member, the end of the male buckle member is inserted into the female buckle member and then further pushed inward with a predetermined or more force, whereby elastic arms at both sides of the male buckle member are slid and secured in side holes formed at both sides of the female buckle member.

[0005] In order to separate the female buckle member and the male buckle member from each other, the elastic arms of the male buckle member exposed through the side holes of the female buckle member are pressed with a predetermined or more force, whereby the male buckle member is released out of the female buckle member.

[0006] However, according to common buckles, if the two elastic arms of the male buckle member are not simultaneously pressed with the same force when the male buckle member is separated from the female buckle member, the front end of the male buckle member is turned to a side in the female buckle member and is not pulled out at a time, which causes inconvenience.

[0007] In particular, when there is no sufficient space for holding both arms of a male buckle member, which depends on the position of a buckle or the kind of product using a buckle, it is difficult to simultaneously press the two elastic arms of the male buckle member, which worsen the problem.

Disclosure

Technical Problem

[0008] The present invention has been proposed to solve the problems in the related art and an object of the present invention is to provide a buckle having an easily releasable structure allowing for easy separation of a female buckle member and a male buckle member even if it is difficult to hold the buckle by improving the structure and shape of the female buckle member and the male

buckle member.

[0009] However, the objects of the present invention are not limited to those stated above and other objects not stated above may be clear to those skilled in the art from the following description.

Technical Solution

[0010] In order to achieve the above object, according to one aspect of the present invention, there is provided an easily separable buckle, the buckle including a male buckle member and a female buckle member. The male buckle member has: a male buckle body having a first coupler at a first end; a guide formed at a first side of a second end of the male buckle body and having a first guide surface on an outer side; and an elastic arm formed at a second side of the second end of the male buckle body at a predetermined distance from the guide, the elastic arm having flexibility to be bent toward the guide by force from the outside, and having a projection on an outer side and a second guide surface formed on an outer side of the projection. The female buckle member has: a female buckle body having a second coupler at a first end; a housing formed at a second end of the female buckle body and having a space for receiving the guide and the elastic arm; and a side hole formed through a side of the housing and securing the projection of the elastic arm such that the projection is exposed to the outside when the guide and the elastic arm are inserted in the space.

[0011] The first guide surface may be inclined toward the elastic arm.

[0012] The second guide surface may be inclined toward the guide.

[0013] A pair of first guide protrusions may be formed with a first guide groove therebetween on each of a top and a bottom of the guide, and a pair of second guide grooves corresponding to the first guide protrusions may be formed with a second guide protrusion corresponding to the first guide groove therebetween on each of upper and lower inner sides of the housing.

[0014] The first coupler may have a pair of first coupler holes formed in a line at both sides of the first end of the male buckle body.

[0015] The second coupler may have a pair of second coupler holes formed in a line at both sides of the first end of the female buckle body.

Advantageous Effects

[0016] According to the buckle having an easily releasable structure according to the present invention, the male buckle member is simply separated from the female buckle member when the projection, which is exposed through a side of the female buckle member, of the male buckle member is pressed with the female buckle member and the male buckle member fastened to each other, so it is possible to easily unlock the buckle even if it is

difficult to hold the buckle. Therefore, the buckle can be more conveniently used.

Description of Drawings

[0017]

FIG. 1 is a perspective view of a convenient-to-use buckle in a locked state according to an embodiment of the present invention.

FIG. 2 is a perspective view of the convenient-to-use buckle in an unlocked state according to an embodiment of the present invention.

FIG. 3 is a perspective view of a male buckle member the convenient-to-use buckle according to an embodiment of the present invention.

FIG. 4 is a perspective view of a female buckle member of the convenient-to-use buckle according to an embodiment of the present invention.

Mode for Invention

[0018] A convenient-to-use buckle according to the present invention is used to fasten belts, waist belts, and shoelaces etc. that are used for bags, shoes, and clothes etc., and includes a female buckle member and a male buckle member that are simply coupled and separated.

[0019] In particular, even if the buckle is difficult to hold with the female buckle member and the male buckle member coupled, the buckle can be conveniently unlocked through simple operation.

[0020] This characteristic is achieved by a structure in which when the male buckle member and the female buckle member are coupled, the male buckle member and the female buckle member are separated by pressing an elastic arm, which is secured in a side hole of the female buckle member, of the male buckle member with predetermined or more force.

[0021] That is, unlike existing buckles, the male buckle member and the female buckle member are simply separated only by pressing the elastic arm of the male buckle member with one finger.

[0022] Accordingly, the buckle can be easily unlocked even if the buckle is difficult to hold, depending on the position of the buckle or the product using the buckle, so the buckle can be more conveniently used.

[0023] Hereinafter, exemplary embodiments of the present invention are described in detail with reference to the accompanying drawings.

[0024] A convenient-to-use buckle 100 according to an embodiment of the present invention may be composed of a female buckle member 300 and a male buckle member 200 that can be fastened to each other.

[0025] First, the male buckle member 200, as shown in FIG. 3, may have a male buckle body 210, a guide 230, and an elastic arm 240.

[0026] The male buckle body 210 supports the guide 230 and the elastic arm 240.

[0027] A first coupler 220 may be formed at a first end of the male buckle body 210.

[0028] The first coupler 220 is provided to fasten a belt, a waist belt, and a shoelace etc. to the male buckle member 200. To this end, the first coupler 220, as shown in FIG. 3, may have a pair of first coupling holes 221 formed in a line at both sides of the first end of the male buckle body 210.

[0029] The guide 230 is formed at a second end of the male buckle body 210 to be inserted into the female buckle member 300 with the elastic arm 240 so that the elastic arm 240 is secured in the female buckle member 300 when the male buckle member 200 and the female buckle member 300 are fitted.

[0030] To this end, the guide 230 has a first guide surface 231 on the outer side and the first guide surface 231 may be inclined inward toward the center of the male buckle body 210.

[0031] The elastic arm 240 is formed at a second end of the male buckle body 210 to be inserted into the female buckle member 300 with the guide 230 and secured therein so that the male buckle member 200 is not separated from the female buckle member 300 when the male buckle member 200 and the female buckle member 300 are fitted.

[0032] To this end, the elastic arm 240 is formed at a predetermined distance from the guide 230 and has flexibility to be bent toward the guide 230 when external force is applied.

[0033] A projection 241 may be formed on the outer side of the elastic arm 240. A second guide surface 242 is formed on the outer side of the projection 241 and it may be inclined inward toward the center of the male buckle body 210.

[0034] On the other hand, the female buckle member 300 may have a female buckle body 310, a housing 330, and a side hole 340.

[0035] The female buckle body 310 supports the housing 330.

[0036] A second coupler 320 may be formed at a first end of the female buckle body 310.

[0037] The second coupler 320 is provided to fasten a belt, a waist belt, and a shoelace etc. to the female buckle member 300. To this end, the second coupler 320, as shown in FIG. 4, may have a pair of second coupling holes 321 formed in a line at both sides of the first end of the female buckle body 310.

[0038] The housing 330 is formed at a second end of the female buckle body 310 to receive the guide 230 and the elastic arm 240 of the male buckle member 200 when the female buckle member 300 and the male buckle member 200 are fastened.

[0039] To this end, the housing 330 may have an open side and a space 331 therein. The space 331 is formed to correspond to the shape made by the guide 230 and the elastic arm 240 so that the guide 230 and the elastic arm 240 can be received therein.

[0040] That is, when the guide 230 and the elastic arm

240 are inserted into the housing 330, the first guide surface 231 and the second guide surface 242 come in contact with both inner sides of the housing 330 and the elastic arm 240 is bent toward the guide 230. Accordingly, the gap between the guide 230 and the elastic arm 240 decreases, so the guide 230 and the elastic arm 240 are smoothly inserted into the housing 330.

[0041] The side hole 340 is formed through a side of the housing 330 to secure the projection 241 when the guide 230 and the elastic arm 240 are inserted in the housing 330 so that the male buckle member 200 cannot be separated from the female buckle member 300.

[0042] That is, the elastic arm 240 is elastically returned to the initial position from the guide 230 when the guide 230 and the elastic arm 240 are fully inserted in the space 331, so the projection 241 is secured in the side hole 340 and exposed to the outside.

[0043] Accordingly, when the projection 241 of the male buckle member 200 is pressed by predetermined or more force in the state shown in FIG. 1, the projection 241 is pushed inward through the side hole 340 and the guide 230 and the elastic arm 240 are separated from the housing 330, so the male buckle member 200 and the female buckle member 300 are separated, as shown in FIG. 2.

[0044] On the other hand, as shown in FIG. 2, a pair of first guide protrusions 232 may be formed with a first guide groove 233 therebetween on each of the top and bottom of the guide 230 and a pair of second guide grooves 333 may be formed with a second guide protrusion 332 therebetween on each of the upper and lower inner sides of the housing 330.

[0045] The first guide protrusions 232 may be formed in a shape corresponding to the second guide grooves 333 and the second guide protrusion 332 may be formed in a shape corresponding to the first guide grooves 233.

[0046] When the guide 230 and the elastic arm 240 are inserted into the space of the housing 330, the first guide protrusions 232 and the second guide protrusions 332 are guided by the first guide grooves 233 and the second guide grooves 333, respectively, in order that the guide 230 and the elastic arm 240 can be inserted in place.

[0047] According to the buckle having an easily releasable structure according to the present invention, the male buckle member is simply separated from the female buckle member when the projection, which is exposed through a side of the female buckle member, of the male buckle member is pressed with the female buckle member and the male buckle member fastened to each other, so it is possible to easily unlock the buckle even if it is difficult to hold the buckle. Therefore, the buckle can be more conveniently used.

[0048] The embodiment is provided just as an example and the present invention may be modified in various ways by those skilled in the art. Therefore, not only the embodiment, other modifications should be included in the technical protective range of the present invention by

the spirit of the present invention described in claims.

Industrial Applicability

[0049] The present invention relates to a buckle for bags, clothes, and shoes, etc. to fasten desired objects such as a belt, a waist belt, and a shoelace. In detail, the present invention can be applied to a buckle having an easily releasable structure comprising a female buckle member and male buckle member that can be separably secured to each other and simply separated.

Claims

1. A buckle having easy separation operation, the buckle comprising: a male buckle member and a female buckle member, wherein the male buckle member has:

a male buckle body having a first coupler at a first end;
a guide formed at a first side of a second end of the male buckle body and having a first guide surface on an outer side; and
an elastic arm formed at a second side of the second end of the male buckle body at a predetermined distance from the guide, having flexibility to be bent toward the guide by force from the outside, and having a projection on an outer side and a second guide surface formed on an outer side of the projection and inclined inward, and
the female buckle member has:

a female buckle body having a second coupler at a first end;
a housing formed at a second end of the female buckle body and having a space for receiving the guide and the elastic arm; and
a side hole formed through a side of the housing and securing the projection of the elastic arm such that the projection is exposed to the outside when the guide and the elastic arm are inserted in the space.

2. The buckle of claim 1, wherein the first guide surface is inclined toward the elastic arm.

3. The buckle of claim 1, wherein the second guide surface is inclined toward the guide.

4. The buckle of claim 1, wherein a pair of first guide protrusions is formed with a first guide groove therebetween on each of a top and a bottom of the guide, and
a pair of second guide grooves corresponding to the

first guide protrusions is formed with a second guide protrusion corresponding to the first guide groove therebetween on each of upper and lower inner sides of the housing.

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5. The buckle of claim 1, wherein the first coupler has a pair of first coupler holes formed in a line at both sides of the first end of the male buckle body.

6. The buckle of claim 1, wherein the second coupler has a pair of second coupler holes formed in a line at both sides of the first end of the female buckle body.

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FIG.1

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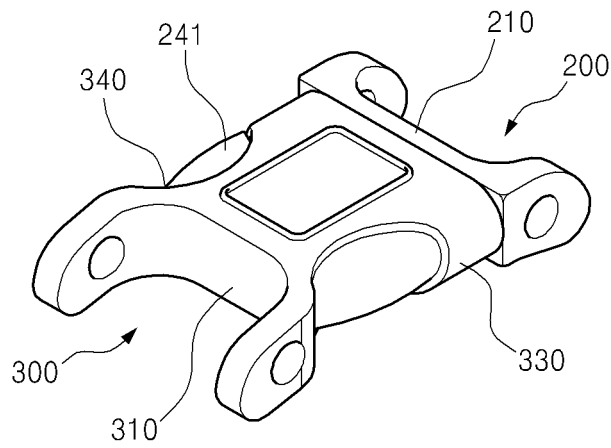


FIG.2

100

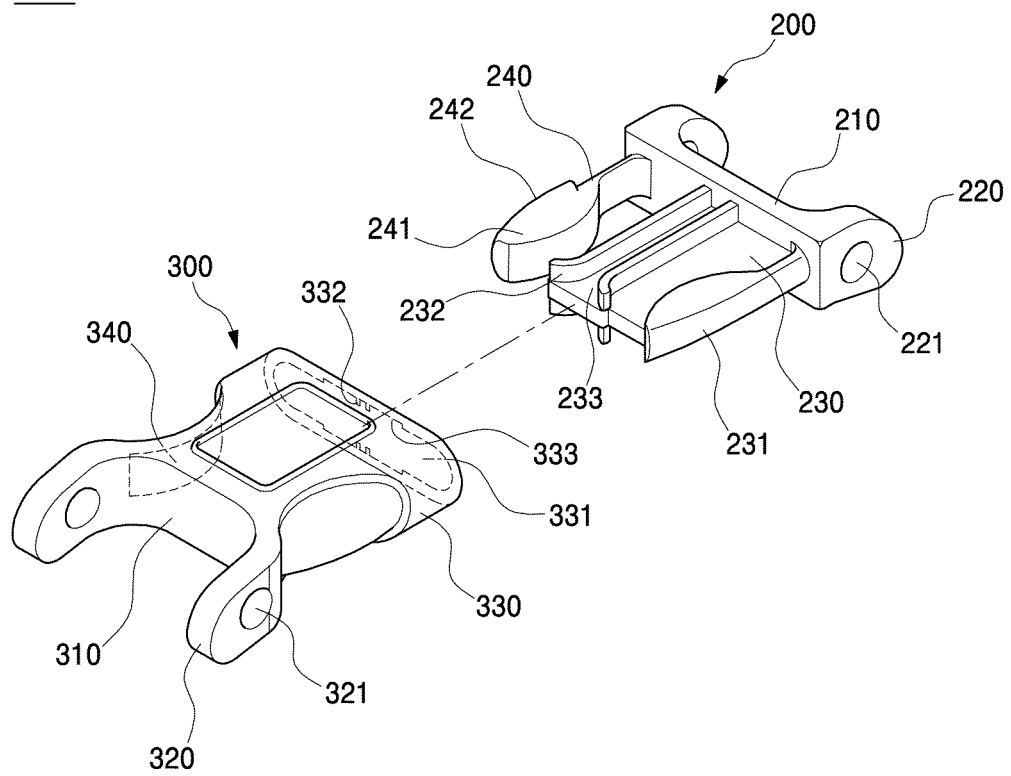


FIG.3

200

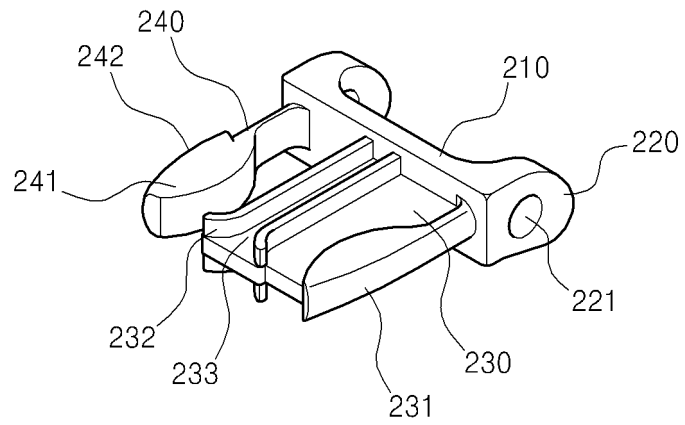
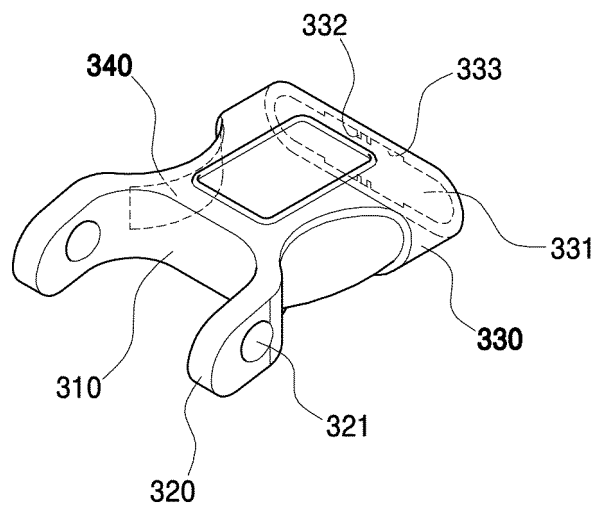


FIG.4

300



INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2015/013667

A. CLASSIFICATION OF SUBJECT MATTER

A44B 11/25(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)

A44B 11/25; A44B 11/26; A43B 5/00; A43C 7/08

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) & Keywords: buckle, separation, coupling, male buckle, female buckle, coupling guide piece, elastic coupling piece, receptor, hooking hole

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	KR 10-2004-0014269 A (YKK CORPORATION) 14 February 2004 See claims 1-8; pages 4-5; and figures 1-6.	1-3
Y		4-6
Y	KR 10-1998-0087244 A (NATIONAL MOLDING CORP.) 05 December 1998 See page 3; and figures 1-8.	4
Y	KR 20-2011-0011759 U (AN, Ki Won) 21 December 2011 See figures 1-2.	5-6
A	KR 20-2000-0004891 U (NIFCO INC.) 15 March 2000 See claims 1-2; and figures 1-2.	1-6
A	KR 10-2010-0109070 A (NIFCO KOREA INC.) 08 October 2010 See claims 1-2; and figures 1-5.	1-6

☐ 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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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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Date of the actual completion of the international search

01 APRIL 2016 (01.04.2016)

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.

PCT/KR2015/013667

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