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(54) **DEVICE FOR COUPLING STRAP AND SUBORDINATE ITEM**

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(52) **U.S. Cl.** ..... **24/194; 24/612**

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(57) **ABSTRACT**

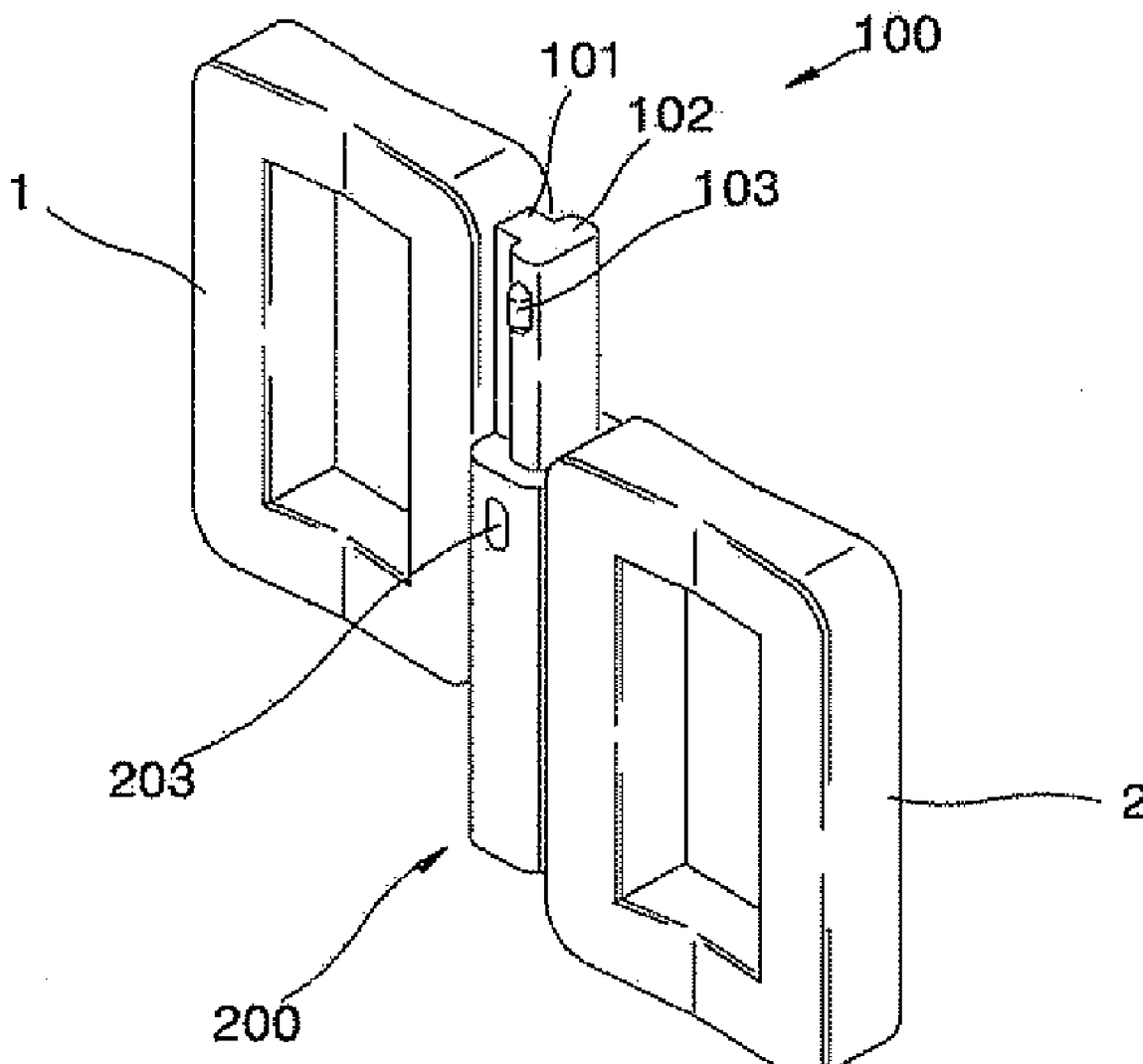
A coupling device includes a plug member having a rectangular rail support part and a rectangular rail connected to an outer end of the rectangular rail support part; and a socket member having a rectangular rail groove into which the rectangular rail is fitted and a slot which is defined through a side wall of the socket member defining the rail groove to extend in a lengthwise direction of the rail groove so as to allow the rail support part to pass therethrough. Of both lengthwise ends of the socket member, one end is open to define an entrance through which the rectangular rail is fitted into the rail groove, and the other end is closed.

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(22) Filed: **Jun. 25, 2009**

(30) **Foreign Application Priority Data**

Apr. 18, 2009 (KR) ..... 10-2009-0033904



**FIG. 1**

**Prior Art**

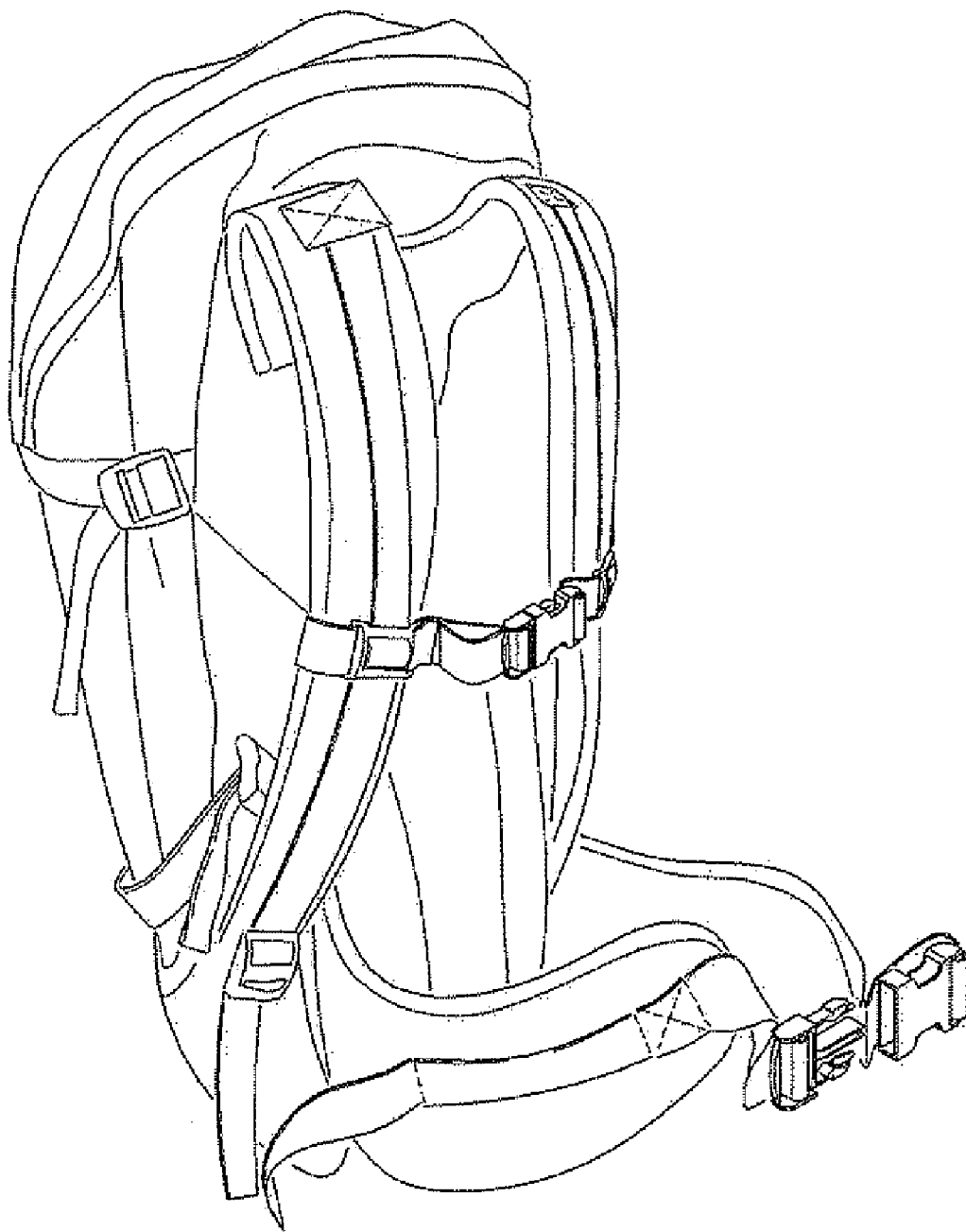


FIG. 2

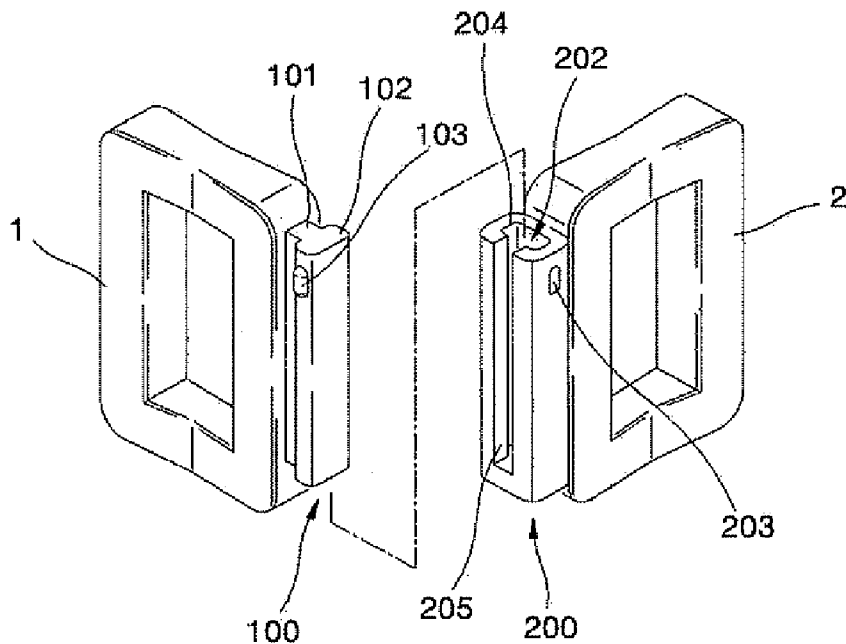


FIG. 3

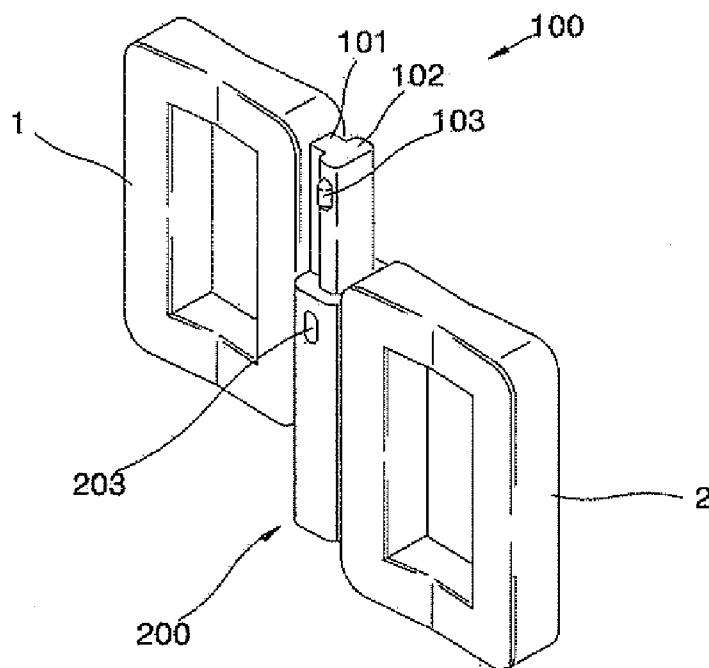


FIG. 4

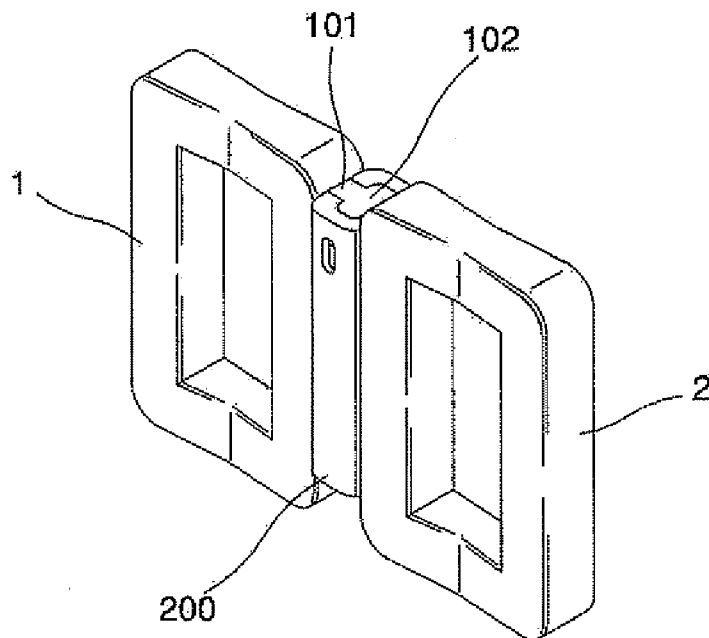


FIG. 5

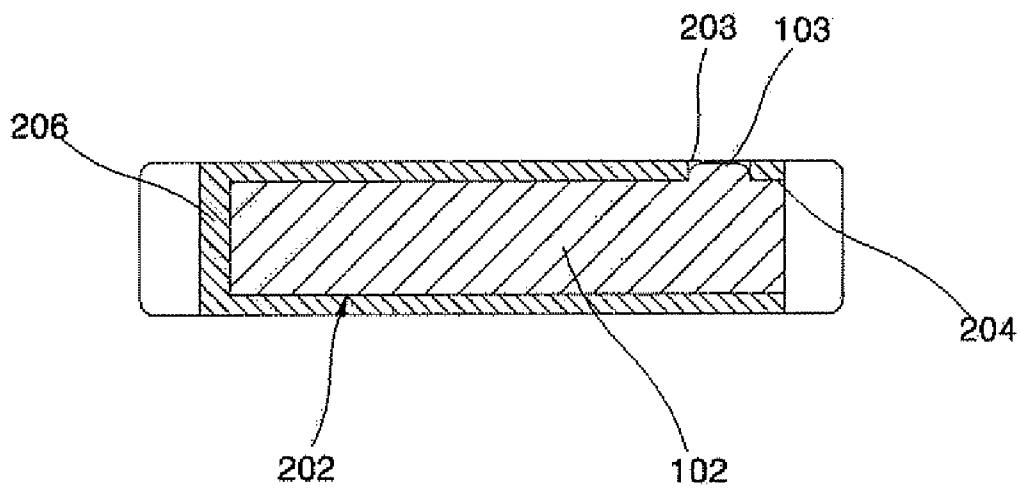


FIG. 6

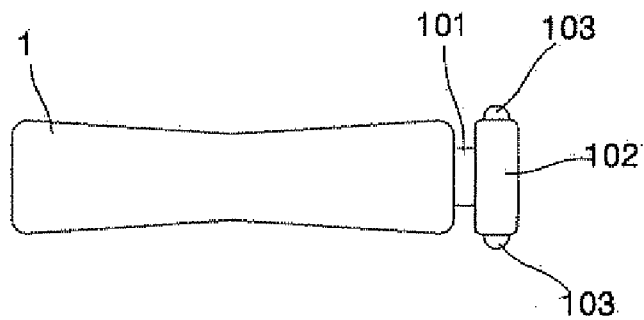


FIG. 7

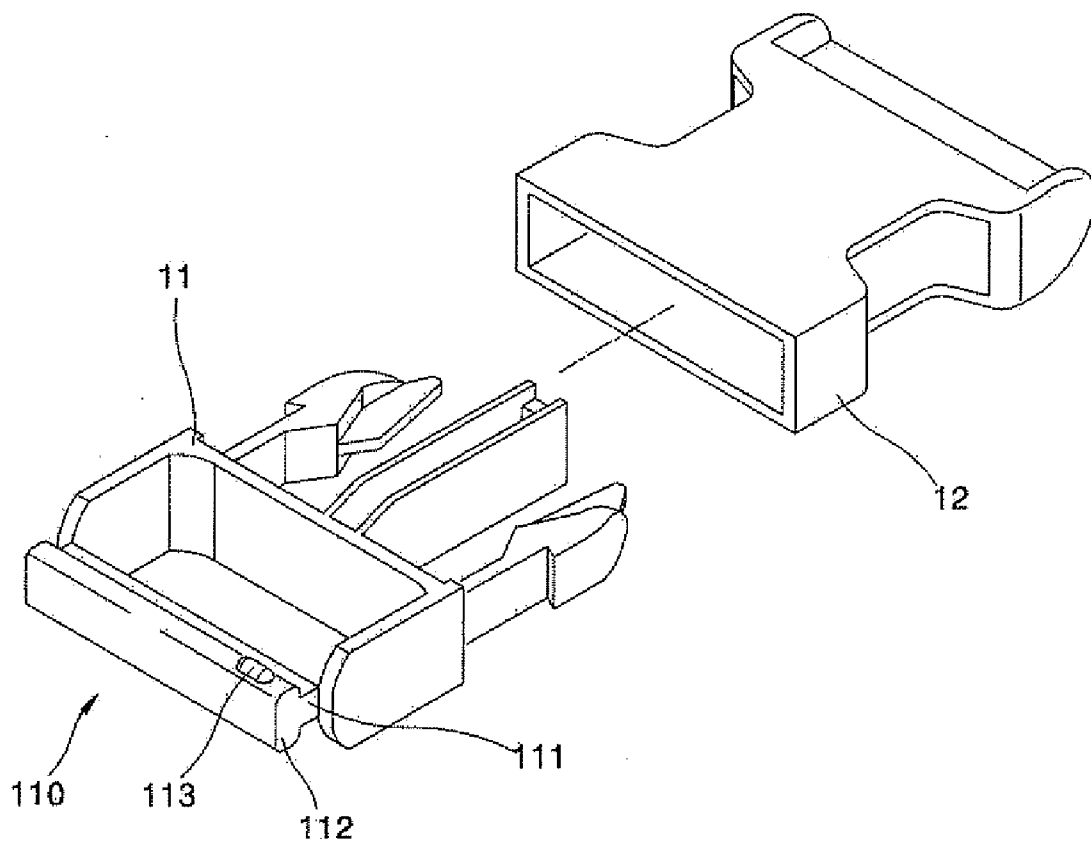


FIG. 8

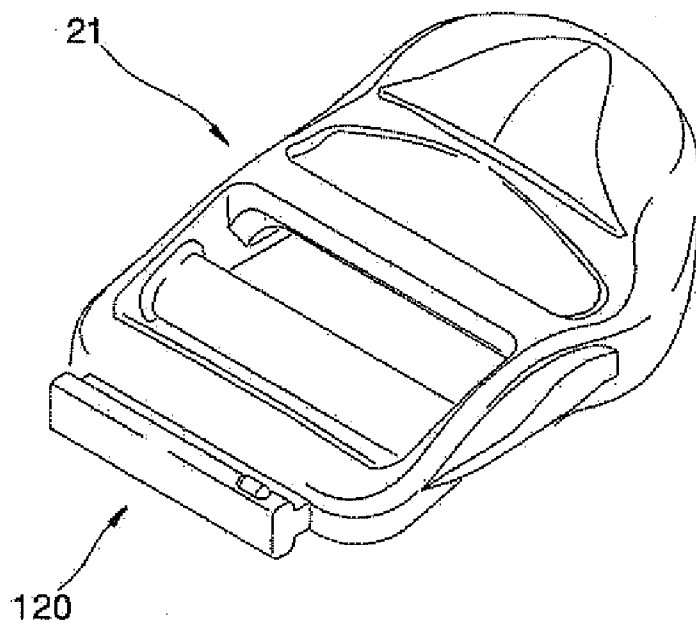


FIG. 9

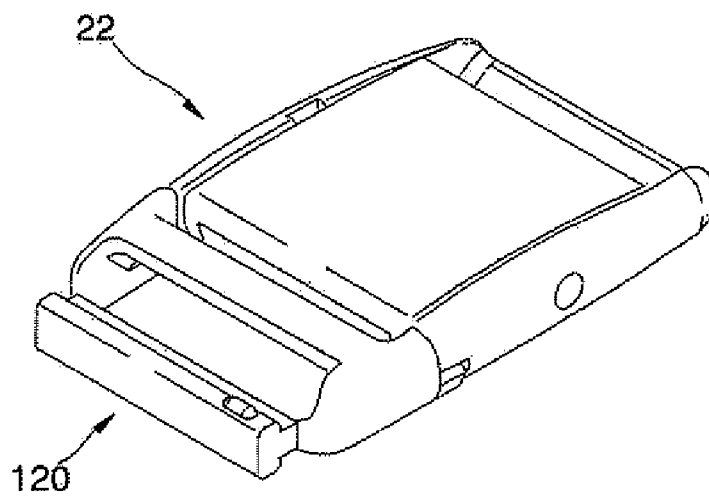


FIG. 10

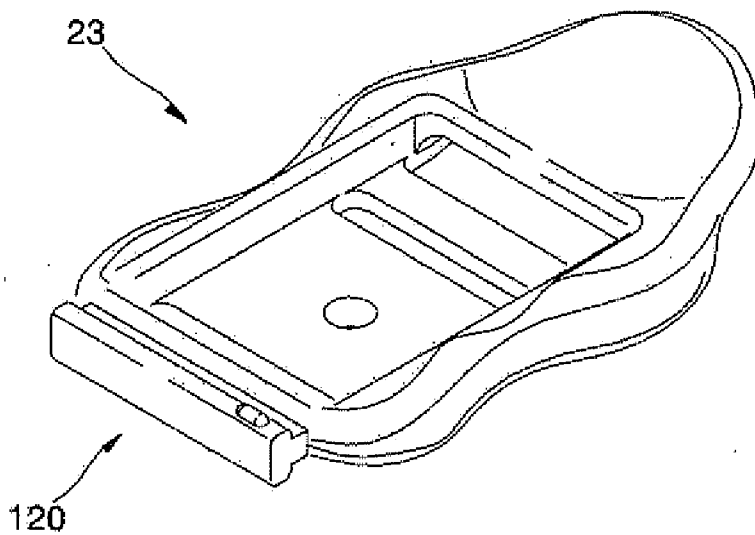


FIG. 11

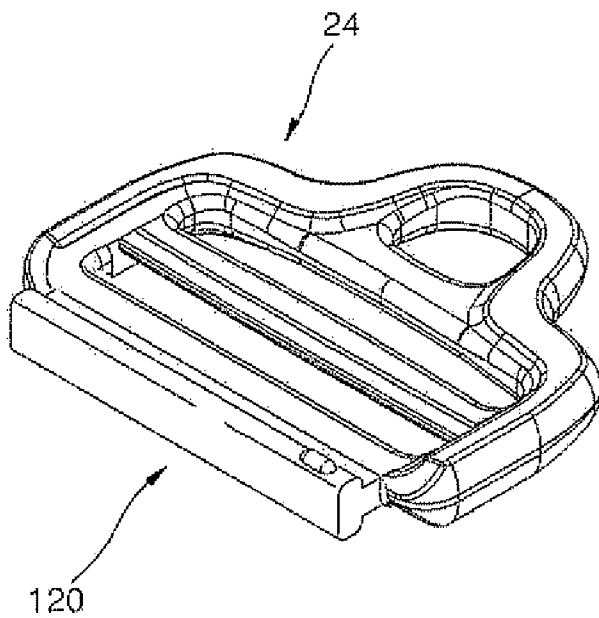


FIG. 12

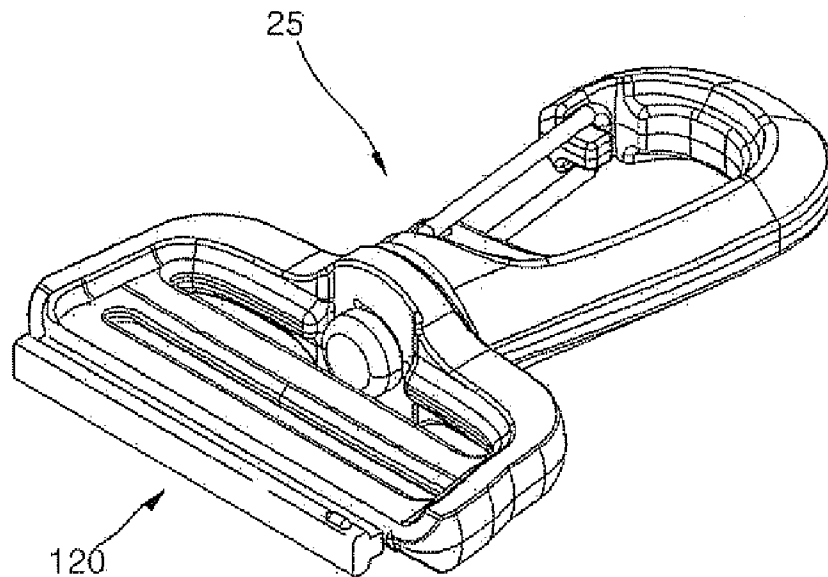


FIG. 13

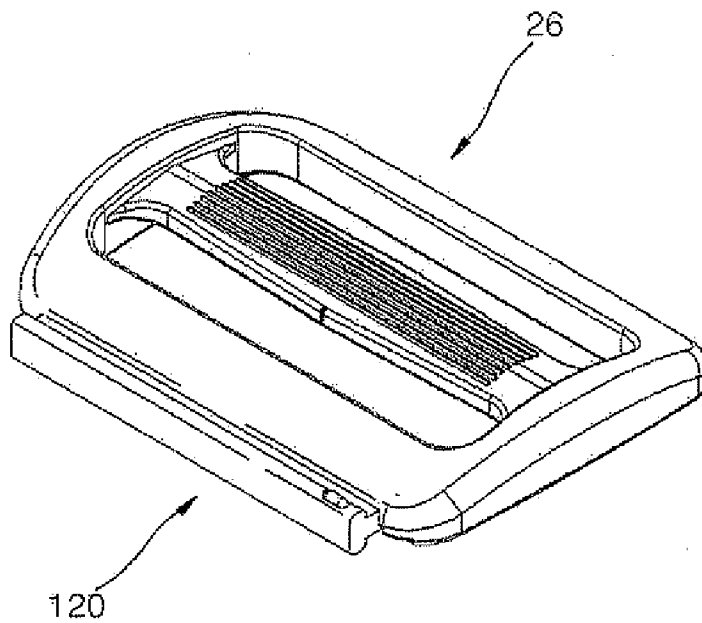




FIG. 14

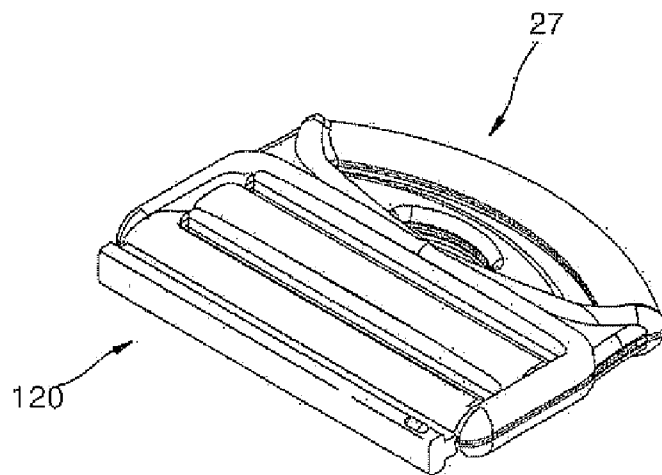


FIG. 15

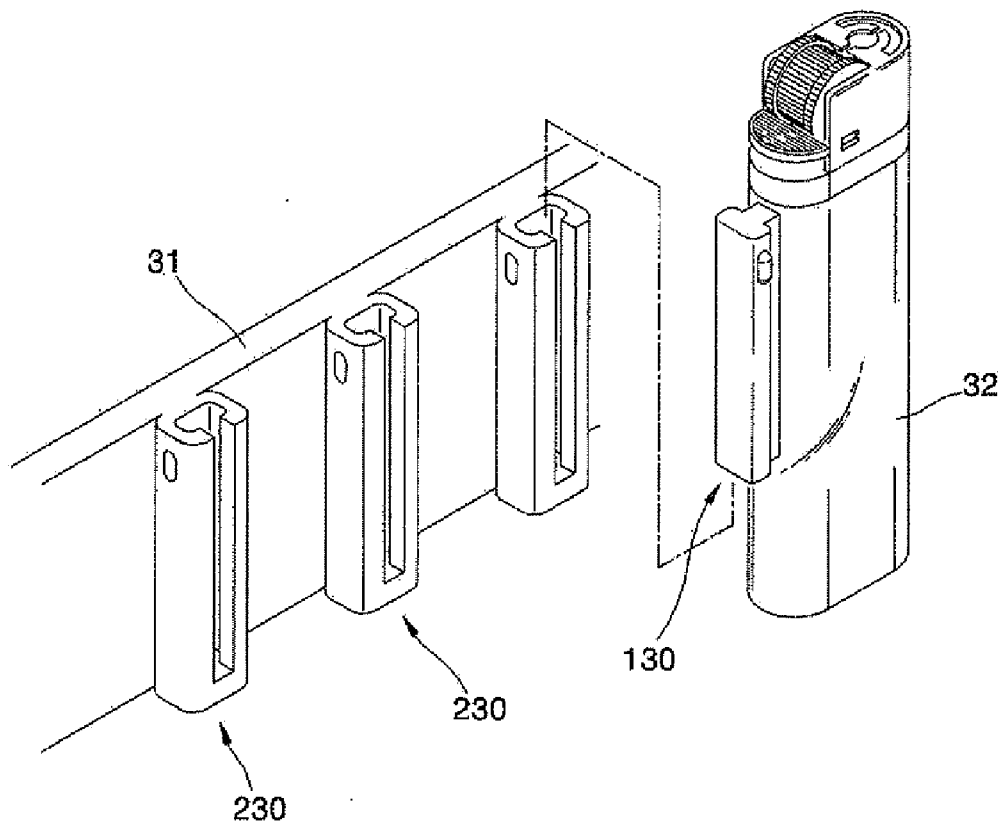


FIG. 16

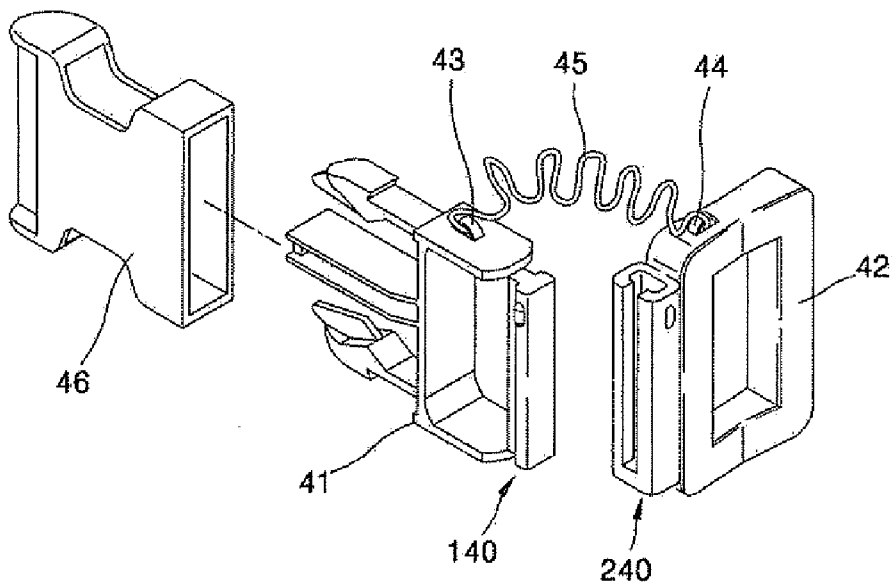


FIG. 17

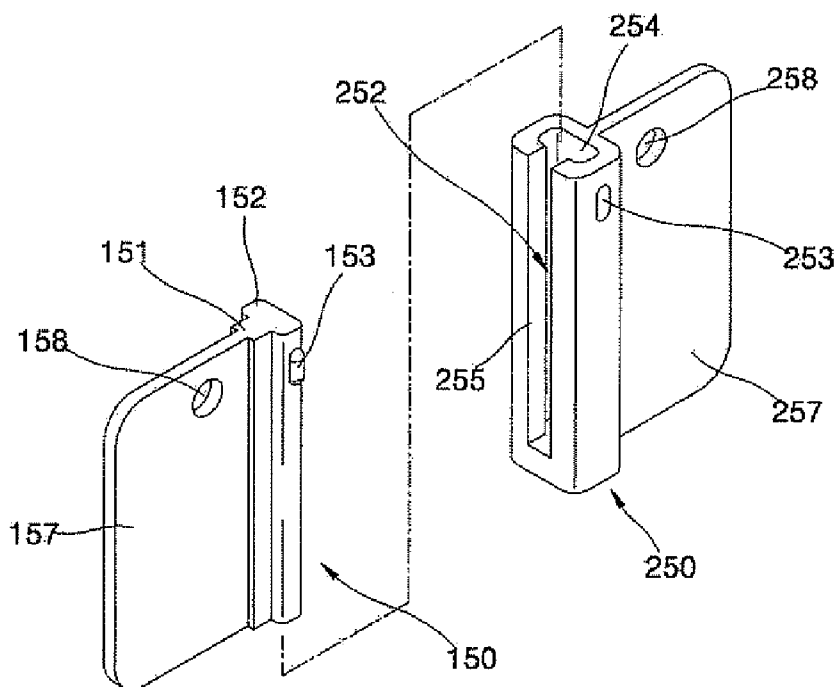


FIG. 18

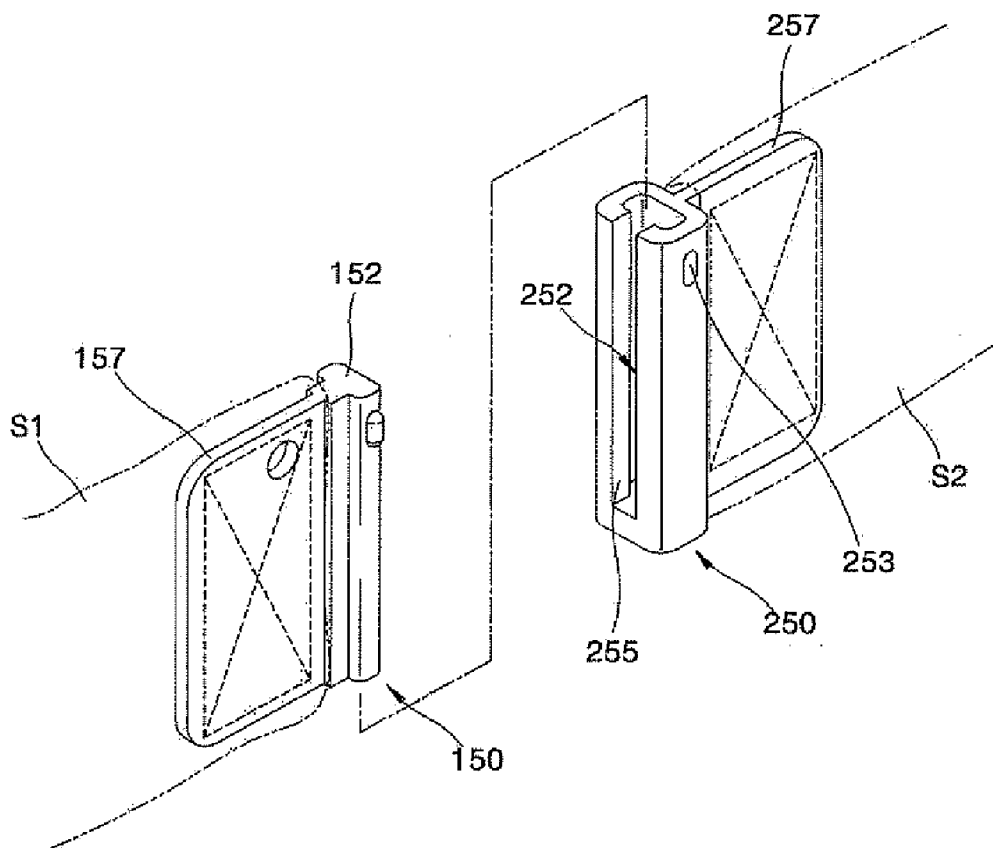


FIG. 19

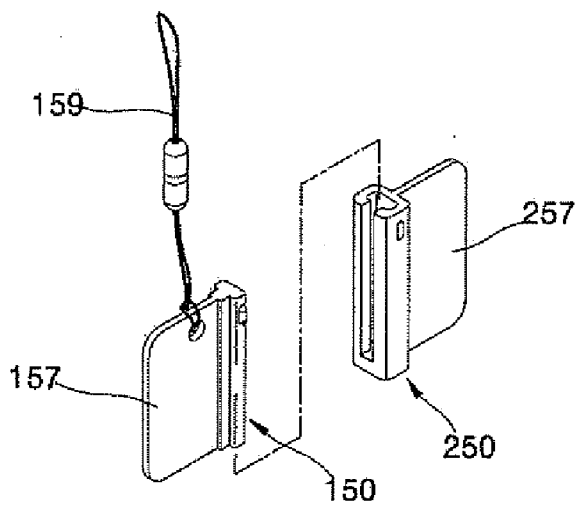


FIG. 20

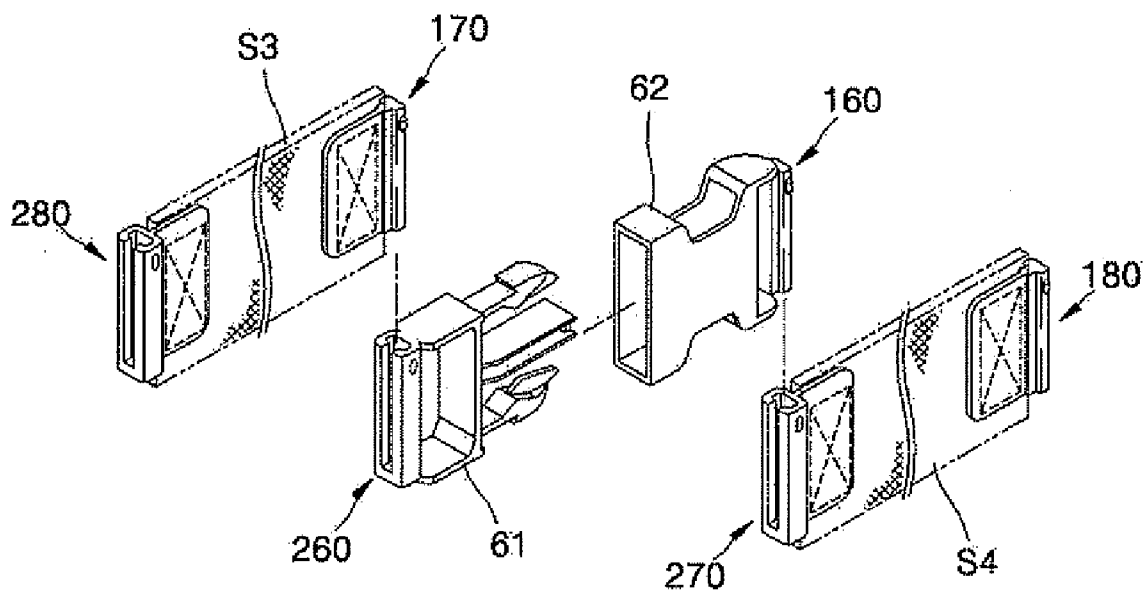
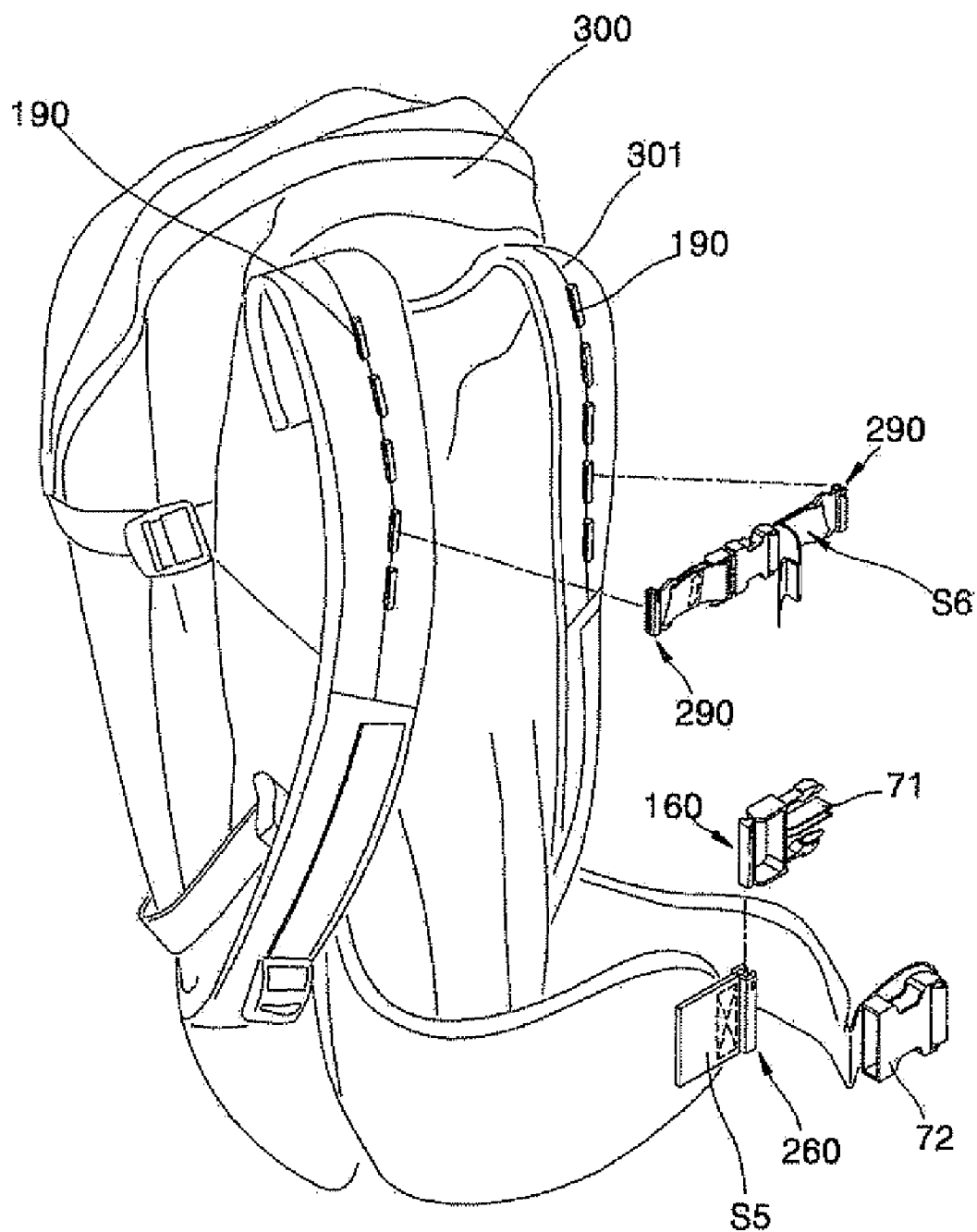


FIG. 21



## DEVICE FOR COUPLING STRAP AND SUBORDINATE ITEM

### BACKGROUND OF THE INVENTION

**[0001]** 1. Field of the Invention

**[0002]** The present invention relates to a device for coupling a strap and a subordinate item which allows a strap installed on knapsacks, bags, clothes, helmets, etc. and each of various subordinate items to be conveniently coupled to and decoupled from each other.

**[0003]** 2. Description of the Related Art

**[0004]** In general, a number of subordinate items are mounted to knapsacks, bags, hats, clothes, etc. as the occasions demand. For example, a plurality of straps are installed at various places on a knapsack for mountain-climbing such that they are stitched at their ends as shown in FIG. 1. Also, variously shaped subordinate items such as adjusters and carabiners are installed on the straps to perform their own functions, and belts and buckles for fastening the belts are installed on the straps as well.

**[0005]** When taking outdoor activities such as camping or mountain-climbing, various subordinate items including a lantern, a cup, an alpine stick, a water bottle, and so forth are carried such that they are received in or suspended from a knapsack.

**[0006]** While these numerous subordinate items are carried because they are necessary for the outdoor activities, since some of them are carried in the state in which they are unstably suspended, the outer appearance of the knapsack deteriorates, and since the remaining subordinate items are unstably received, inconvenience is caused when using those subordinate items.

**[0007]** The plurality of straps installed on the knapsack have first ends which are stitched to the knapsack and second ends which are freed so that other straps or subordinate items can be connected thereto. However, it is the norm that most straps are not usually used. Also, adjusters and subordinate items attached and connected to the straps deteriorate the outer appearance of the knapsack, and the subordinate items, which are irregularly suspended from the straps, interfere with surrounding articles so that inconvenience is caused or an accident is likely to occur when taking outdoor activities.

**[0008]** Further, since the straps or subordinate items which are fixedly installed or connected to the knapsack perform their functions at fixed positions, disadvantages are caused in that compatibility with other subordinate items having different functions is degraded to some extent.

**[0009]** Moreover, in the conventional art, in order to couple subordinate items to the straps, one or more slots are defined in each of the subordinate items, and the straps are passed through the slots so that the straps can be wound and fixed in a variety of ways. Also, in order to connect elements of the knapsack, a female type buckle and a male type buckle are used. As a consequence, it is inconvenient to connect or couple the straps and the subordinate items or elements of the knapsack with each other, and the connected and coupled states become unstable.

**[0010]** Therefore, the conventional coupling structure results in the increase in the number of elements and costs. Further, the outer appearance of the knapsack deteriorates since the straps are not tidily arranged, and inconvenience is caused when using the subordinate items or elements of the knapsack.

**[0011]** As a result, in the conventional art, the straps, subordinate items and elements, which are fixedly installed on and connected to knapsacks, bags, clothes, and so forth, deteriorate outer appearances, and since they cannot but be kept mounted even when they are not necessary, inconvenience is caused in motion. Therefore, technical means for solving these problems are keenly demanded in the art.

### SUMMARY OF THE INVENTION

**[0012]** Accordingly, the present invention has been made in an effort to solve the problems occurring in the related art, and an object of the present invention is to provide a device for coupling a strap and a subordinate item, which is structured to allow a strap installed on knapsacks, etc. and each of various subordinate items to be coupled to and decoupled from each other and thereby be selectively used as the occasion demands.

**[0013]** Another object of the present invention is to provide a device for coupling a strap and a subordinate item, which is structured to allow a strap installed on knapsacks, etc. and each of various subordinate items to be coupled to and decoupled from each other in a simple and convenient manner.

**[0014]** Still another object of the present invention is to provide a device for coupling a strap and a subordinate item, which can render an aesthetic outer appearance to a knapsack, etc. by allowing each of various subordinate items for being mounted to the knapsack to be directly coupled to the surface of the knapsack, so that it is possible to prevent a strap, etc. from swaying while being attached to the knapsack, noise generation due to collision of subordinate items can be avoided, and interference between the subordinate item and a surrounding article can be minimized.

**[0015]** In order to achieve the above objects, according to one aspect of the present invention, there is provided a coupling device comprising a plug member having a rectangular rail support part and a rectangular rail connected to an outer end of the rectangular rail support part; and a socket member having a rectangular rail groove into which the rectangular rail is fitted and a slot which is defined through a side wall of the socket member defining the rail groove to extend in a lengthwise direction of the rail groove so as to allow the rail support part to pass therethrough, wherein, of both lengthwise ends of the socket member, one end is open to define an entrance through which the rectangular rail is fitted into the rail groove, and the other end is closed.

**[0016]** According to another aspect of the present invention, the rail support part and the rail connected to the outer end of the rail support part cooperatively define a transverse sectional shape of a 'T', and the rail has a larger width than the rail support part when viewed in a transverse section.

**[0017]** According to another aspect of the present invention, a stopper is formed on a side surface of the rectangular rail adjacent to an upper end of the rail in such a way as to project outward, and an engagement groove is defined on a surface of the rail groove of the socket member through which the rectangular rail is fitted, to correspond to the stopper of the rail.

**[0018]** According to another aspect of the present invention, the rectangular rail and the rail groove of the socket member, through which the rail is fitted, have linear or curved configurations when viewed in a lengthwise direction thereof.

**[0019]** According to another aspect of the present invention, the plug member and the socket member are respectively

coupled to first ends of objects, and cord connectors are formed on the objects such that the objects are connected with each other by a cord.

[0020] According to another aspect of the present invention, cord connectors are formed on first ends of the plug member and the socket member such that the plug member and the socket member are connected with each other by a cord.

[0021] According to another aspect of the present invention, the plug member or the socket member integrally projects from one end of a strap adjuster as an object to be connected.

[0022] According to another aspect of the present invention, the strap adjuster comprises a buckle for a knapsack or a carabiner.

[0023] According to another aspect of the present invention, a thin fastening plate extends rearward from the rail support part of the plug member and is stitched to an object to be stitched, and another object having the socket member is coupled to the rail of the plug member which is fastened through stitching.

[0024] According to another aspect of the present invention, the object to be stitched comprises a knapsack or a strap which is installed on a knapsack or a bag.

[0025] According to another aspect of the present invention, a thin fastening plate extends rearward from one surface of the socket member and is stitched to an object to be stitched, and another object having the plug member is coupled to the rail groove of the socket member which is fastened through stitching.

[0026] According to another aspect of the present invention, the object to be stitched comprises a knapsack or a strap which is installed on a knapsack or a bag.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0027] The above objects, and other features and advantages of the present invention will become more apparent after a reading of the following detailed description taken in conjunction with the drawings, in which:

[0028] FIG. 1 is a perspective view illustrating a conventional knapsack;

[0029] FIG. 2 is an exploded perspective view illustrating a coupling device in accordance with an embodiment of the present invention;

[0030] FIGS. 3 and 4 are perspective views illustrating the assembly of the coupling device shown in FIG. 2;

[0031] FIG. 5 is a transverse sectional view illustrating the assembled state of the coupling device shown in FIG. 2;

[0032] FIG. 6 is a plan view illustrating a variation of a plug member according to the present invention;

[0033] FIG. 7 is a perspective view illustrating a state in which the coupling device according to the present invention is applied to a buckle for a knapsack;

[0034] FIGS. 8 through 14 are perspective views illustrating various subordinate items to which the plug member according to the present invention is applied;

[0035] FIG. 15 is a perspective view illustrating another application of the coupling device according to the present invention;

[0036] FIG. 16 is a perspective view illustrating a state in which a cord is used in the coupling device according to the present invention;

[0037] FIGS. 17 through 20 are perspective views illustrating examples in which the coupling device according to the present invention is applied to a strap; and

[0038] FIG. 21 is a perspective view illustrating a knapsack to which the coupling device according to the present invention is applied.

#### DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0039] Reference will now be made in greater detail to preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings. Wherever possible, the same reference numerals will be used throughout the drawings and the description to refer to the same or like parts.

[0040] FIG. 2 is an exploded perspective view illustrating a coupling device in accordance with an embodiment of the present invention, FIGS. 3 and 4 are perspective views illustrating the assembly of the coupling device shown in FIG. 2, and FIG. 5 is a transverse sectional view illustrating the assembled state of the coupling device shown in FIG. 2. Referring to these drawings, a coupling device according to the present invention generally comprises a plug member 100 serving as a male type member and a socket member 200 serving as a female type member. The plug member 100 and the socket member 200 are formed on the facing ends of a first object 1 and a second object 2 such that they can be coupled to and decoupled from each other.

[0041] FIGS. 2 through 5 illustrate a coupling relationship of the plug member 100 and the socket member 200. The plug member 100 has a rail support part 101 and a rail 102. The rail support part 101 is formed integrally with the first object 1.

[0042] The rail 102 having a rectangular sectional shape is connected to an outer end of the rail support part 101 having a rectangular sectional shape. The rail support part 101 and the rail 102 connected to the outer end of the rail support part 101 cooperatively define the transverse sectional shape of a 'T'. The rail 102 has a larger width than the rail support part 101 when viewed in the transverse section. A stopper 103 is formed on a side surface of the rail 102 adjacent to the upper end of the rail 102 in such a way as to project outward. While the rail 102 having the rectangular sectional shape is formed to have a linear configuration when viewed in the lengthwise direction thereof, it can be envisaged that the rail 102 can have a curved configuration.

[0043] The socket member 200 is formed integrally with an end of the second object 2. The socket member 200 has a rail groove 202 which has a rectangular sectional shape to allow the rail 102 of the plug member 100 to be fitted therein. A slot 205 is defined through a side wall of the socket member 200 defining the rail groove 202 to extend in the lengthwise direction of the rail groove 202 and communicate with the rail groove 202 such that the rail support part 101 can be fitted into the slot 205. Of both lengthwise ends of the socket member 200, one end is open to define an entrance 204 through which the rail 102 having the rectangular sectional shape is fitted into the rail groove 202, and the other end is closed.

[0044] Preferably, the entrance 204 to the rail groove 202 is defined to have the same sectional shape as the rail 102. The width of the slot 205 is smaller than the width of the rail groove 202 and allows the rail support part 101 to pass there-through.

[0045] The rail 102 having the rectangular sectional shape and the rail groove 202 of the socket member 200, through

which the rail 102 is fitted, can have linear or curved configurations when viewed in the lengthwise direction thereof.

[0046] An engagement groove 203 is defined on the surface of the rail groove 202 of the socket member 200 to correspond to the stopper 103 of the rail 102. When the rail 102 is completely fitted into the rail groove 202, the stopper 103 is engaged into the engagement groove 203 so that the state in which the rail 102 is fitted into the rail groove 202 can be reliably maintained. The stopper 103 and the engagement groove 203 are formed and defined at corresponding positions as shown in FIG. 6.

[0047] The rail 102 is slidably fitted into the rail groove 202. At the time when the stopper 103 reaches the engagement groove 203, resistance force is generated due to the presence of the stopper 103, and then, by pressing the rail 102 with greater force, the projecting height of the stopper 103 is introduced into the engagement groove 203, whereby the engagement between the stopper 103 and the engagement groove 203 is completed.

[0048] The end of the rail groove 202 which is opposite the entrance 204 can be configured to be closed. Since a blocking wall 206 is formed due to the fact that the end of the rail groove 202 opposite the entrance 204 is closed, when the plug member 100 and the socket member 200 are coupled to each other, it is possible to prevent the rail 102 from being released out of the rail groove 202 upon pressing the stopper 103 against the resistance force of the inner surface of the socket member 200. That is to say, when force is applied to fit the rail 102 into the rail groove 202, the blocking wall 206 defines a movement limit and functions to reliably maintain the rail 102 at the coupled position.

[0049] In this way, the first object 1 and the second object 2 as ring elements having the plug member 100 and the socket member 200 can be simply connected with each other through fitting of the rail 102 into the rail groove 202. By applying force in a direction opposite to the fitting direction, the rail 102 can be simply decoupled from the rail groove 202. Straps or other articles can be connected to the ring elements so that they can be appropriately used.

[0050] While the first object 1 and the second object 2 are illustrated and explained as ring elements in the present embodiment, it is to be understood that the first object 1 and the second object 2 can comprise various elements.

[0051] FIGS. 7 through 14 illustrate various objects to which the plug member and the socket member according to the present invention are applied. It is to be noted that the plug member or the socket member can be selectively applied to the respective objects as the occasions demand.

[0052] FIG. 7 illustrates an example to which the present invention is applied to a buckle. The buckle is mounted to ends of straps called as belts or webbings attached to knapsacks, bags, helmets, etc. and functions to allow two belts or webbings to be connected with and disconnected from each other. While it is illustrated in the drawing that a plug member 100 is formed on a male type buckle 11, a plug member or a socket member can be formed on a female type buckle 12. The male type buckle 11 can be coupled to and decoupled from another female type buckle 12.

[0053] The plug member 110 is formed on the end of the male type buckle 11 opposite to the end at which the male type buckle 11 is coupled to the female type buckle 12. The plug member 110 has a rail support part 111 and a rail 112 which are formed in the same manner as described with reference to FIGS. 2 through 4. That is to say, the rail support part 111 is

formed integrally with the rear end of the male type buckle 11. The rail 112 is formed on the outer end of the rail support part 111 while forming stepped portions. The rail 112 has a linear configuration with a predetermined width. A stopper 113 is formed on a side surface of the rail 112 adjacent to the upper end of the rail 112 to project outward.

[0054] The male type buckle 11 can be coupled to and decoupled from the female type buckle 12 irrespective of the presence of the plug member 110. A separate object having a socket member which is to be coupled to the plug member 110 can be selectively connected to the plug member 110.

[0055] FIGS. 8 through 14 are perspective views illustrating objects which have plug members as connection elements according to other examples of the present invention. The objects 21, 22, 23, 24, 25, 26 and 27 shown in these drawings comprise subordinate items which are mainly used on straps such as belts and webbings of bags or knapsacks. While it is illustrated in the drawings that all objects have plug members 120, it is to be appreciated that these objects merely constitute examples of the present invention and other objects having various shapes and functions can be adopted without departing from the scope and spirit of the present invention.

[0056] In particular, FIGS. 11 and 12 illustrate examples that plug members are applied to rings or carabiners. Various articles or items can be conveniently connected by these rings or carabiners. Referring to FIGS. 13 and 14, the present invention can be applied to strap adjusters for performing various functions such as of adjusting the length or tension of straps such as belts or webbings or for fastening straps to articles.

[0057] FIG. 15 illustrates an example in which a first object 31 has a plurality of continuous socket members 230. Optional second objects 32 having plug members 130 corresponding to the socket members 230 of the first objects 31 can be selectively fitted into socket members 230 as desired so as to be carried or kept in a place.

[0058] It is to be noted that, even when the socket members 230 of the first objects 31 are replaced with plug members and the objects 32 are formed with socket members, the same functions are accomplished. Thus, as a plurality of continuous socket members or plug members are provided in this way, convenience can be provided when carrying or keeping articles.

[0059] FIG. 16 illustrates another embodiment of the present invention. Referring to FIG. 16, cord connectors 43 and 44 are formed on surfaces of a first object 41 and a second object 42 which have a plug member 140 and a socket member 240 to be detachably coupled to each other, and a cord 45 is connected to the cord connector 43 and 44. The cord connectors 43 and 44 can comprise rings. Unlike this, the cord connectors 43 and 44 can comprise holes which are defined on ends of the first and second objects 41 and 42.

[0060] In FIG. 16, the first object 41 comprises a male type buckle which is mounted to a belt and is coupled with a female type buckle 46, and the second object 42 comprises a ring-shaped element. It is to be noted that these limitations of the first object 41 and the second object 42 do not have any specific meaning and the cord 45 can be applied to other various objects in the same manner.

[0061] Since the first object 41 and the second object 42 are connected by the cord 45, even when the plug member 140 and the socket member 240 of the respective objects 41 and 42 are intentionally or unintentionally decoupled from each other, the connected state of the first and second objects 41



and 42 can be maintained whereby the likelihood of the first and second objects 41 and 42 to be lost can be minimized.

[0062] While it is illustrated in FIGS. 2 through 16 that objects, to which the coupling device according to the present invention is applied, comprise subordinate items or articles, it is conceivable that the coupling device according to the present invention can be directly mounted to clothes, belts, knapsacks, bags, etc. to be used. FIGS. 17 through 21 illustrate other embodiments in which the coupling device according to the present invention is applied to a knapsack and straps such as belts or webbings installed on a knapsack.

[0063] The belts or webbings are attached to a knapsack for mountain-climbing or a school bag. In the case of a knapsack for mountain-climbing, the belts or webbings are used for various purposes such as for shoulder straps, chest straps, waist straps, etc. Hereafter, belts or webbings will be referred to as straps having a concept that includes the belts used for the various purposes described above.

[0064] FIG. 17 is an exploded perspective view illustrating a plug member and a socket member which constitute a coupling device according to another embodiment of the present invention, and FIG. 18 illustrates a state in which the coupling device shown in FIG. 17 is installed on straps. Referring to these drawings, a rail 152 is formed on a side of a plug member 150 which constitutes a male type member of the coupling device according to the present invention, to have a linear configuration with a predetermined width. The rail 152 is connected at the inner end thereof to a rail support part 151 while forming stepped portions. A stopper 153 is formed on a side surface of the rail 152 adjacent to the upper end of the rail 152 to project outward. A thin fastening plate 157 extends from the end of the rail support part 151 which faces away from the rail 152.

[0065] A rail groove 252 is defined in the socket member 250 which constitutes a female type member of the coupling device according to the present invention to correspond to the plug member 150, such that the rail 152 of the plug member 150 can be fitted into the rail groove 252. An entrance 254, through which the rail 152 is fitted into the rail groove 252, is defined at one end of the socket member 250. A slot 255 is defined through a side wall of the socket member 250 defining the rail groove 252 to extend in the lengthwise direction of the rail groove 252 and communicate with the rail groove 252.

[0066] Preferably, the entrance 254 to the rail groove 252 is defined to have the same sectional shape as the rail 152. The width of the slot 255 is smaller than the width of the rail groove 252 and allows the rail support part 151 to pass there-through.

[0067] The slot 255 can be selectively defined through another side wall of the socket member 250 in conformity with the coupling structure of the rail 152 and the rail support part 151.

[0068] An engagement groove 253 is defined on the surface of the rail groove 252 of the socket member 250 to correspond to the stopper 153 of the rail 152. When the rail 152 is completely fitted into the rail groove 252, the stopper 153 is engaged into the engagement groove 253 so that the state in which the rail 152 is fitted into the rail groove 252 can be reliably maintained.

[0069] Similarly to the plug member 150, a thin fastening plate 257 extends from the end of the socket member 250 which faces away from the end at which the slot 255 is defined.

[0070] The fastening plate 157 of the plug member 150 and the fastening plate 257 of the socket member 250 are respectively stitched to the free ends of straps so that the straps can be installed with the plug member 150 and the socket member 250 fastened thereto. As shown in FIG. 18, the plug member 150 and the socket member 250 are fastened to different straps S1 and S2 to be detachably coupled to each other.

[0071] By the plug member 150 and the socket member 250 which are fastened to different straps S1 and S2, the two straps S1 and S2 can be simply connected with each other without using separate connection elements.

[0072] Referring to FIG. 17, holes 158 and 258 are defined through the fastening plates 157 and 257 of the plug member 150 and the socket member 250. When the plug member 150 and the socket member 250 are installed on objects, for example, when the plug member 150 is installed on a strap and the socket member 250 is installed on a buckle, the holes 158 and 258 can serve as cord connectors for connecting the cord as shown in FIG. 16.

[0073] According to this fact, in the state in which a strap connected to a knapsack or a bag is detachably connected with a subordinate item by the coupling device according to the present invention, even when the plug member 150 and the socket member 250 are decoupled from each other, the subordinate item is kept suspended from the strap and is therefore prevented from being lost.

[0074] The holes 158 and 258 defined in the fastening plates 157 and 257 can be used for other purposes. For example, as shown in FIG. 19, a separate connection string 159 can be connected to the fastening plate 157 so that a mobile phone, a portable memory, a key or other accessories can be connected to be carried.

[0075] FIG. 20 illustrates an embodiment in which the coupling device according to the present invention is applied to both of a strap and a subordinate item. Referring to FIG. 20, a socket member 260 and a plug member 160 are respectively formed on the rear ends of a male type buckle 61 and a female type buckle 62 which are to be coupled to each other. Also, a plug member 170 and a socket member 270 are stitched to the first ends of straps S3 and S4 to be connected with the male type buckle 61 and the female type buckle 62, such that the plug member 170 and the socket member 270 can be coupled to the socket member 260 and the plug member 160. Consequently, the male type buckle 61 and the female type buckle 62 can be simply connected to the straps S3 and S4 using coupling devices according to the present invention. A socket member 280 and a plug member 180 are stitched to the second ends of the straps S3 and S4 such that the straps S3 and S4 can be detachably connected with other straps or to a knapsack as shown in FIG. 21.

[0076] FIG. 21 is a perspective view illustrating an exemplary knapsack 300 for mountain-climbing to which the present invention is applied. Referring to FIG. 21, buckles 71 and 72 mounted to waist belts are connected to straps S5 by a plug member 160 and a socket member 260, and a plurality of plug members 190 are continuously stitched to shoulder straps 301. A chest strap S6 having socket members 290 can be simply connected to the plug members 190 of the shoulder straps 301. Therefore, because various subordinate items to be attached to the knapsack 300 can all be connected and disconnected by the plug members and the socket members according to the present invention, unnecessary subordinate items can be disconnected from the knapsack, and only necessary subordinate items can be selectively connected to the

knapsack to be used. According to this fact, the number of subordinate items attached to the knapsack can be decreased so that the weight of the knapsack is reduced. Also, since the straps drooping in an untidy manner can be removed, the knapsack can render an aesthetic outer appearance.

[0077] As is apparent from the above description, in the present invention, coupling between a strap and a subordinate item can be executed only through simple fitting manipulation, whereby convenience in use can be improved.

[0078] Also, in the present invention, it is possible to prevent various straps, subordinate items, etc. from swaying while they are attached to a knapsack, etc., and the straps and the subordinate items can be selectively coupled to each other to be used as the occasion demands, so that an aesthetic outer appearance can be rendered to the knapsack, etc. As a consequence, the weight of the knapsack can be decreased, noise generation due to collision of subordinate items can be avoided, and interference between surrounding articles and the human body can be minimized.

[0079] Further, in the present invention, various accessories can be conveniently carried by mounting them to a knapsack, a bag, etc. Moreover, since the application range of the present invention is very wide, significant convenience can be ensured when carrying knapsacks, bags and accessories.

[0080] Although preferred embodiments of the present invention have been described for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and the spirit of the invention as disclosed in the accompanying claims.

What is claimed is:

1. A coupling device comprising:

a plug member having a rectangular rail support part and a rectangular rail connected to an outer end of the rectangular rail support part; and

a socket member having a rectangular rail groove into which the rectangular rail is fitted and a slot which is defined through a side wall of the socket member defining the rail groove to extend in a lengthwise direction of the rail groove so as to allow the rail support part to pass therethrough,

wherein, of both lengthwise ends of the socket member, one end is open to define an entrance through which the rectangular rail is fitted into the rail groove, and the other end is closed.

2. The coupling device according to claim 1, wherein the rail support part and the rail connected to the outer end of the rail support part cooperatively define a transverse sectional

shape of a 'T', and the rail has a larger width than the rail support part when viewed in a transverse section.

3. The coupling device according to claim 1, wherein a stopper is formed on a side surface of the rectangular rail adjacent to an upper end of the rail in such a way as to project outward, and an engagement groove is defined on a surface of the rail groove of the socket member through which the rectangular rail is fitted, to correspond to the stopper of the rail.

4. The coupling device according to claim 1, wherein the rectangular rail and the rail groove of the socket member, through which the rail is fitted, have linear or curved configurations when viewed in a lengthwise direction thereof.

5. The coupling device according to claim 1, wherein the plug member and the socket member are respectively coupled to first ends of objects, and cord connectors are formed on the objects such that the objects are connected with each other by a cord.

6. The coupling device according to claim 1, wherein cord connectors are formed on first ends of the plug member and the socket member such that the plug member and the socket member are connected with each other by a cord.

7. The coupling device according to claim 1, wherein the plug member or the socket member integrally projects from one end of a strap adjuster as an object to be connected.

8. The coupling device according to claim 7, wherein the strap adjuster comprises a buckle for a knapsack or a carabiner.

9. The coupling device according to claim 1, wherein a thin fastening plate extends rearward from the rail support part of the plug member and is stitched to an object to be stitched, and another object having the socket member is coupled to the rail of the plug member which is fastened through stitching.

10. The coupling device according to claim 9, wherein the object to be stitched comprises a knapsack or a strap which is installed on a knapsack or a bag.

11. The coupling device according to claim 1, wherein a thin fastening plate extends rearward from one surface of the socket member and is stitched to an object to be stitched, and another object having the plug member is coupled to the rail groove of the socket member which is fastened through stitching.

12. The coupling device according to claim 11, wherein the object to be stitched comprises a knapsack or a strap which is installed on a knapsack or a bag.

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