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Kim(10) **Pub. No.: US 2008/0098574 A1**(43) **Pub. Date: May 1, 2008**(54) **CORD LOCK**(76) Inventor: **Gye Youl Kim, Seoul (KR)**

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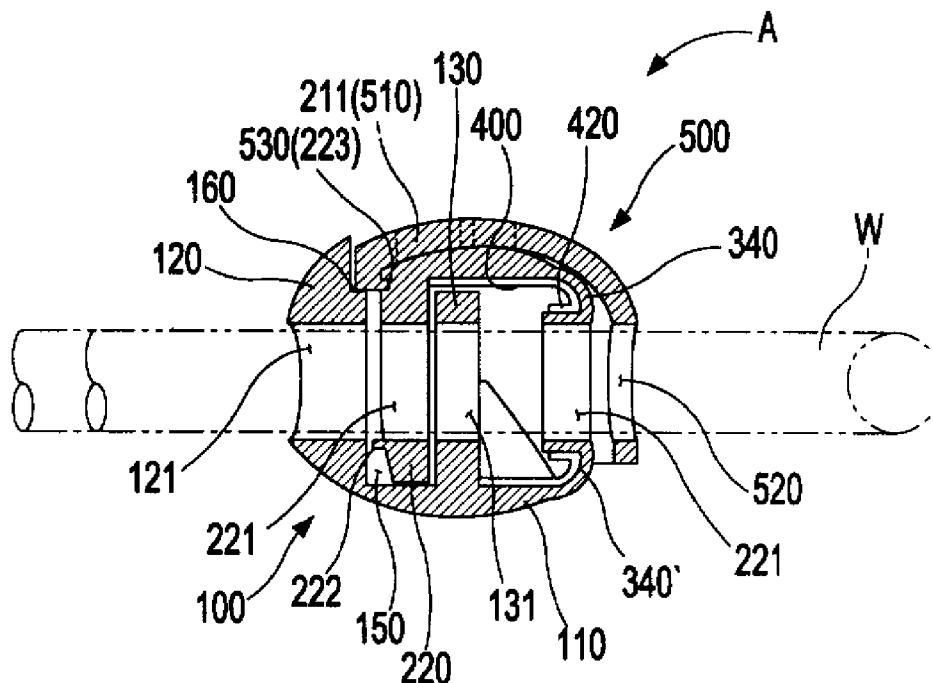
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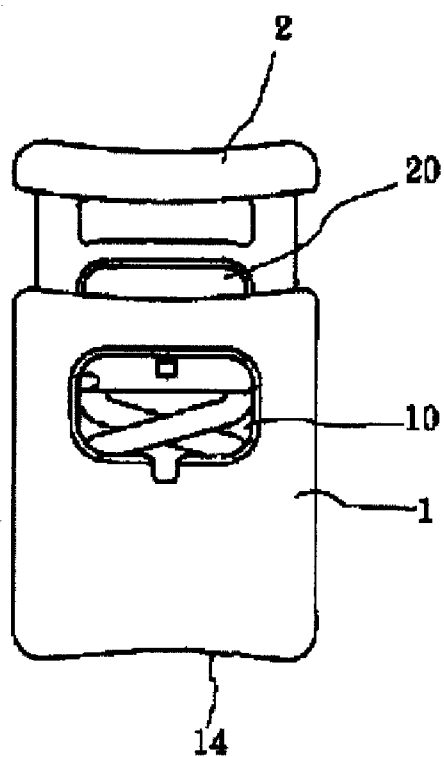
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A44B 21/00 (2006.01)(52) **U.S. Cl.** **24/132 WL**(57) **ABSTRACT**

A cord lock for adjusting the length of a cord used in clothes or bags, including: a main body for receiving the cord, including a bottom cover portion, an outer cover portion and an inner portion formed on the bottom cover portion, a control space portion formed between the outer cover portion and the inner portion, and an oval-shaped first receptor hole and an oval-shaped second receptor hole respectively formed

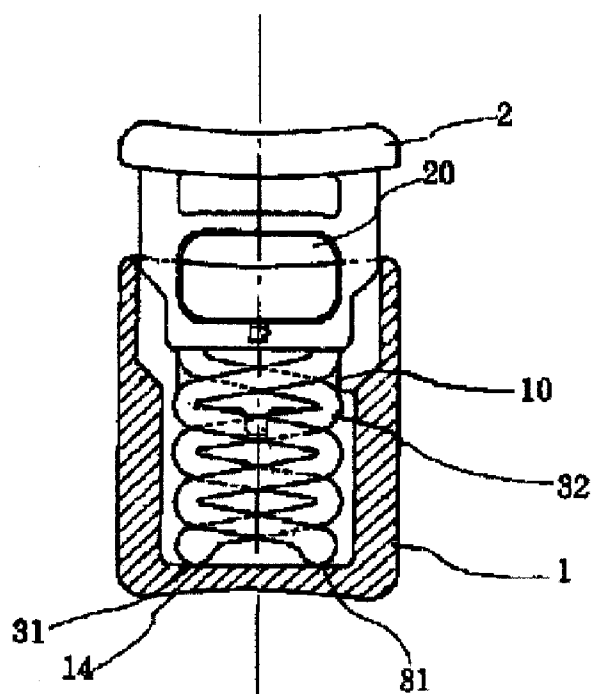
through the outer cover portion and the inner portion for passing the cord; control means for adjusting the length of the cord, which had passed through the first receptor hole and the second receptor hole of the main body, including an upper cover portion provided with a plurality of protrusions, and a control portion protruded approximately perpendicularly from the end of the upper cover portion, received by the control space portion, and provided with a third receptor hole for passing the cord; connecting means produced integrally with the control means and the main body by injection molding for integrally connecting the control means and the main body, and provided with a fourth receptor hole for passing the cord; elastic means assembled with the connecting means to hold the cord, having passed through the first receptor hole and the second receptor hole of the main body, for applying an elastic force to the control means, and provided with a through hole, the outer circumference of which contacts a protuberance of the connecting means, so that the elastic means is firmly assembled with the connecting means; and decoration means for covering the outer surfaces of the control means and the connecting means to ornament the outer appearance of the cord lock, and including through holes, into which the protrusions formed on the surface of the upper cover portion of the control means are inserted by interference fit, and a fifth receptor hole, formed through a portion thereof covering the connecting means, which communicates with the fourth receptor hole of the connecting means. The cord lock includes the main body, the control means, and the connecting means, which are produced into one integral component by injection molding, thereby having decreased production costs and improved productivity. Further, the cord lock comprises decoration means, which serves to ornament the external appearance thereof, and is pressed by an one-touch manner so as to release the holding of the cord, thereby being capable of easily adjusting the length of the cord and increasing convenience in use.



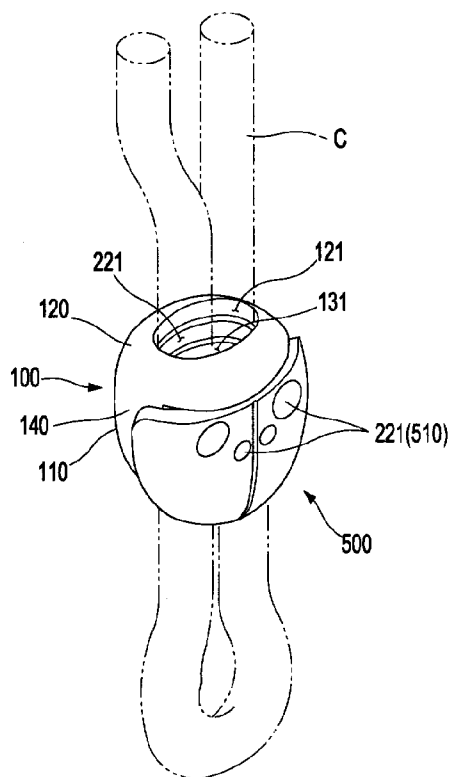
[Fig. 1]



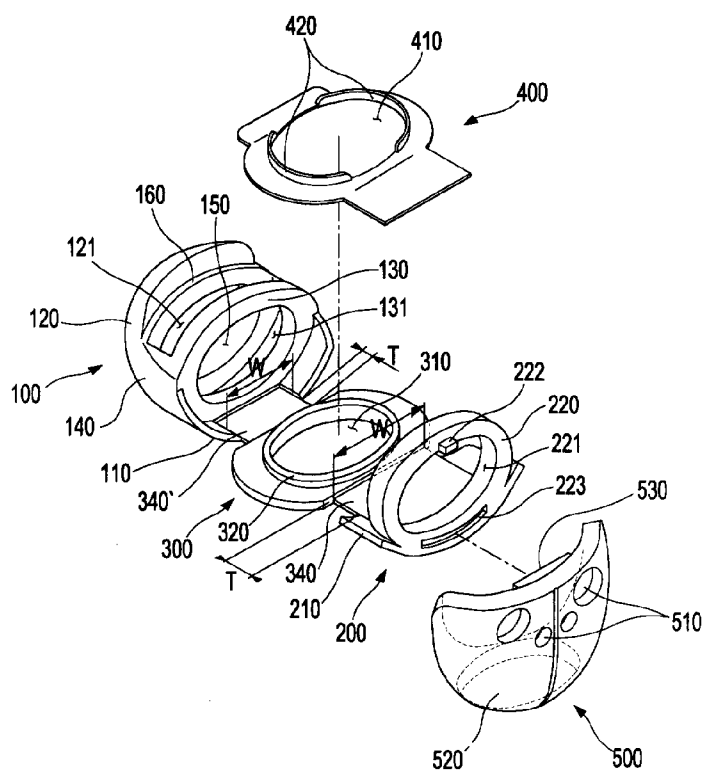
[Fig. 2]



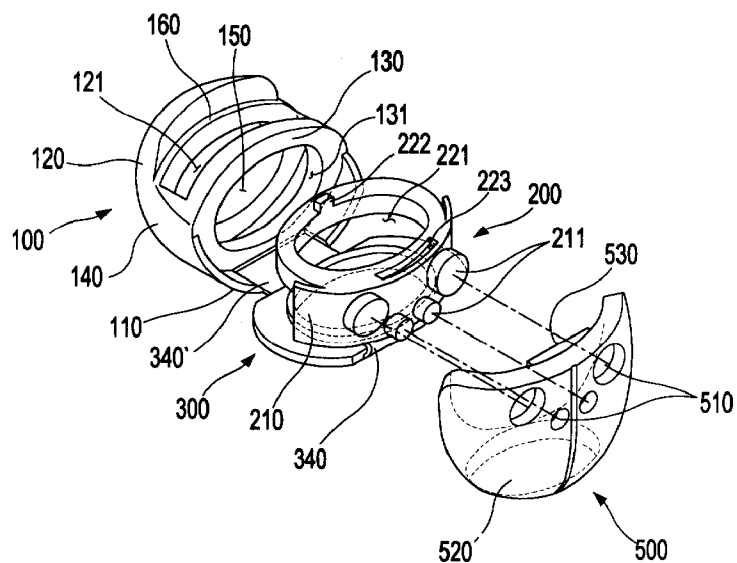
[Fig. 3]



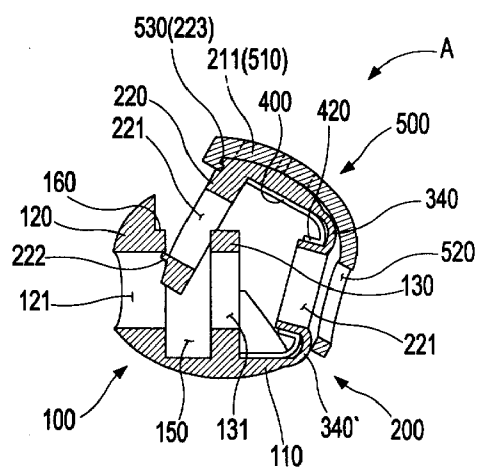
[Fig. 4]



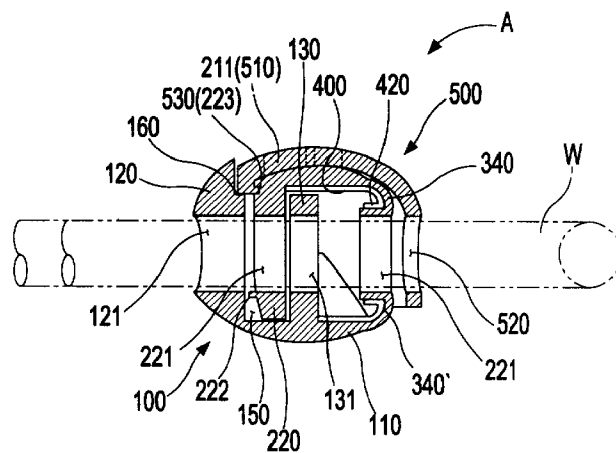
[Fig. 5]

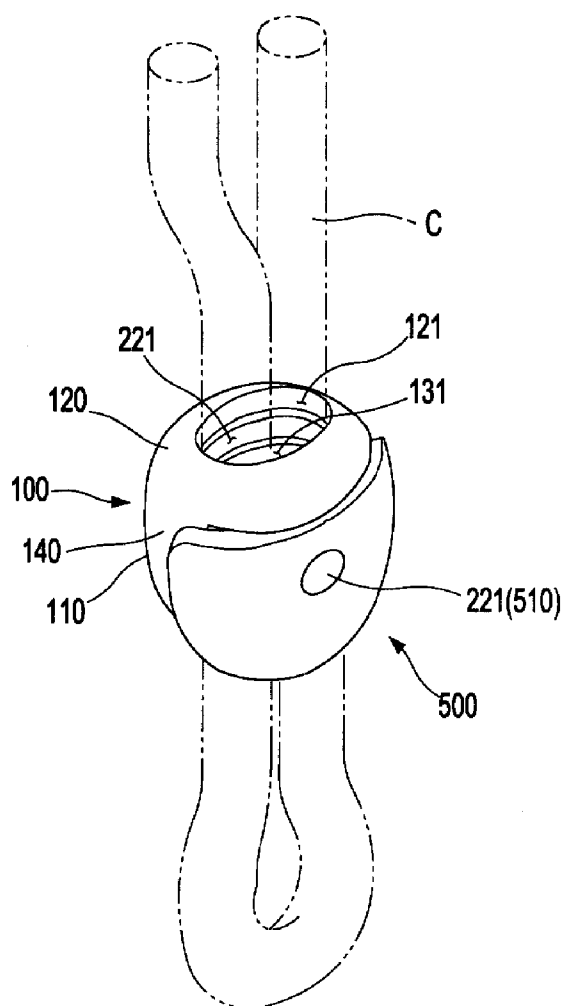


[Fig. 6]



[Fig. 7]





CORD LOCK

TECHNICAL FIELD

[0001] The present invention relates to a cord lock for adjusting the length of a cord used in clothes or bags, and more particularly, to a cord lock having a high quality, a compact structure, and an appearance of a beetle for adjusting the length of the cord, thereby increasing convenience in use.

BACKGROUND ART

[0002] Generally, cord locks for adjusting the length of a cord used in clothes or bags are widely used and have various types.

[0003] For example, Japanese Patent Laid-open Publication No. 2001-70012 filed Mar. 31, 2001 discloses a cord lock.

[0004] As shown in FIGS. 1 and 2, the cord lock disclosed by Japanese Patent Laid-open Publication No. 2001-70012 comprises a cylindrical body 1, a lock member 2, and a pair of elastic bending pieces 3. The cylindrical body 1 includes a through hole 10 formed through the side surface thereof for passing a cord, and one opened end and the other closed end 14. The lock member 2 slidably moves into and is received by the cylindrical body 1 through the opened end of the cylindrical body 1, and includes a through hole 20 in the orthogonal relation to the movement direction thereof. Lower ends of the elastic bending pieces 3 contact the closed end 14 of the cylindrical body 1, and apply an elastic force in the direction of protruding the lock member 2, in a pressed position in which the through hole 20 of the lock member 2 coincides with the through hole 10 of the cylindrical body 1 so that the cord passes through the through holes 10 and 20, from the inside of the cylindrical body 1.

[0005] Since the above-described conventional cord lock, which is disclosed by Japanese Patent Laid-open Publication No. 2001-70012, comprises the cylindrical body 1, the lock member 2, and a pair of the elastic bending pieces 3, such a conventional cord lock has a complicated structure, thereby having increased production costs and deteriorated productivity.

[0006] In case that the cord is not accommodated by the through hole 10 of the cylindrical body 1 and the through hole 20 of the lock member 2, the cylindrical body 1 and the lock member 2 are separated from each other, thereby causing a possibility in missing them and a difficulty in assembling the cord lock.

[0007] That is, the conventional cord lock comprises a plurality of complicated components, thereby increasing production costs and deteriorating productivity, and causes a difficulty in assembling it, thereby being incapable of having an attractive appearance.

DISCLOSURE OF INVENTION

Technical Problem

[0008] Therefore, the present invention has been made in view of the above problems, and it is an object of the present invention to provide a cord lock with a high quality, which has

a compact structure to be easily manufactured, improve productivity, and be simply used, and has an appearance of a beetle.

Technical Solution

[0009] In accordance with the present invention, the above and other objects can be accomplished by the provision of a cord lock for adjusting the length of a cord used in clothes or bags, comprising: a main body for receiving the cord, including a bottom cover portion, an outer cover portion and an inner portion formed on the bottom cover portion, a control space portion formed between the outer cover portion and the inner portion, and an oval-shaped first receptor hole and an oval-shaped second receptor hole respectively formed through the outer cover portion and the inner portion for passing the cord; control means for adjusting the length of the cord, which had passed through the first receptor hole and the second receptor hole of the main body, including an upper cover portion provided with a plurality of protrusions, and a control portion protruded approximately perpendicularly from the end of the upper cover portion, received by the control space portion, and provided with a third receptor hole for passing the cord; connecting means produced integrally with the control means and the main body by injection molding for integrally connecting the control means and the main body, and provided with a fourth receptor hole for passing the cord; elastic means assembled with the connecting means to hold the cord, having passed through the first receptor hole and the second receptor hole of the main body, for applying an elastic force to the control means, and provided with a through hole, the outer circumference of which contacts a protuberance of the connecting means, so that the elastic means is firmly assembled with the connecting means; and decoration means for covering the outer surfaces of the control means and the connecting means to ornament the outer appearance of the cord lock, and including through holes, into which the protrusions formed on the surface of the upper cover portion of the control means are inserted by interference fit, and a fifth receptor hole, formed through a portion thereof covering the connecting means, which communicates with the fourth receptor hole of the connecting means.

Advantageous Effects

[0010] The cord lock comprises the main body, the control means, and the connecting means, which are produced into one integral component by injection molding, thereby having decreased production costs and improved productivity. Further, the cord lock of the present invention comprises decoration means, which serves to ornament the external appearance thereof, and is pressed by an one-touch manner so as to release the holding of the cord, thereby being capable of easily adjusting the length of the cord and increasing convenience in use.

DESCRIPTION OF DRAWINGS

[0011] The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

[0012] FIG. 1 is a plan view of a conventional cord lock;

[0013] FIG. 2 is a longitudinal-sectional view illustrating the internal structure of the conventional cord lock;

[0014] FIG. 3 is a perspective view of a cord lock in accordance with one embodiment of the present invention;

[0015] FIG. 4 is an exploded perspective view of the cord lock in accordance with one embodiment of the present invention;

[0016] FIG. 5 is an exploded perspective view of the cord lock, in a state in which control means is bent, in accordance with one embodiment of the present invention;

[0017] FIG. 6 is a cross-sectional view of the cord lock, in a state in which a stopper of the control means is fastened by a main body, in accordance with one embodiment of the present invention;

[0018] FIG. 7 is a cross-sectional view of the cord lock, in a state in which the length of a cord is varied, in accordance with one embodiment of the present invention;

[0019] FIG. 8 is a longitudinal-sectional view of the cord lock, by which a cord is held, in accordance with one embodiment of the present invention; and

[0020] FIG. 9 is a perspective view of a cord lock in accordance with another embodiment of the present invention.

BEST MODE

[0021] Now, preferred embodiments of the present invention will be described in detail with reference to the annexed drawings.

[0022] FIG. 3 is a perspective view of a cord lock in accordance with one embodiment of the present invention, FIG. 4 is an exploded perspective view of the cord lock in accordance with one embodiment of the present invention, FIG. 5 is an exploded perspective view of the cord lock, in a state in which control means is bent, in accordance with one embodiment of the present invention, FIG. 6 is a cross-sectional view of the cord lock, in a state in which a stopper of the control means is fastened by a main body, in accordance with one embodiment of the present invention, FIG. 7 is a cross-sectional view of the cord lock, in a state in which the length of a cord is varied, in accordance with one embodiment of the present invention, FIG. 8 is a longitudinal-sectional view of the cord lock, by which a cord is held, in accordance with one embodiment of the present invention, and FIG. 9 is a perspective view of a cord lock in accordance with another embodiment of the present invention.

[0023] With reference to FIGS. 3 to 9, reference numeral 100 represents a main body, for receiving a cord C used in clothes or bags, including a bottom cover portion 110, an outer cover portion 120 and an inner portion 130 formed on the bottom cover portion 110, a control space portion 150 formed between the outer cover portion 120 and the inner portion 130, and an oval-shaped first receptor hole 121 and an oval-shaped second receptor hole 131 respectively formed through the outer cover portion 120 and the inner portion 130 so that the cord C passes through the first and second receptor hole 121 and 131.

[0024] Further, side cover portions 140 are respectively provided on both sides of the outer cover portion 120 and the inner portion 130, thereby defining the external appearance of the main body 100. A control unit 160 for controlling the movement of decoration means, which will be described later, is provided on the upper surface of the outer cover portion 120.

[0025] Reference numeral 200 represents control means for adjusting the length of the cord C, which had passed through the first receptor hole 121 and the second receptor hole 131 of the main body 100. The control means 200 includes an upper

cover portion 210 covering the upper portion of the bottom cover portion 110, and a control portion 220 protruded approximately perpendicularly from the end of the upper cover portion 210 and received by the control space portion 150.

[0026] A plurality of protrusions 211 are formed on the surface of the upper cover portion 210 of the control means 200 so that the control means 200 is assembled into the decoration means. An oval-shaped third receptor hole 221 for passing the cord C is formed through the control portion 220.

[0027] A stopper 222, which is inserted into the first receptor hole 12 of the outer cover portion 120 so that the control portion 220 is not separated from the control space portion 150, is protruded from one surface of the control portion 220 of the control means 200, and a concave groove 223, through which the decoration means is firmly assembled with the control portion 220, is formed on the other surface of the control portion 220 in opposite to the stopper 22.

[0028] Reference numeral 300 represents connecting means, for integrally connecting the main body 100 and the control means 200, which is formed integrally with the main body 100 and the control means 200 by injection molding, and includes an oval-shaped fourth receptor hole 310 for passing the cord C.

[0029] A protuberance 320 is protruded from the periphery of the fourth receptor hole 310 of the connecting means 300, thereby allowing elastic means, which will be described later, to be firmly assembled with the connecting means 300.

[0030] Hinge portions 340 and 340' are respectively provided on a boundary space between the connecting means 300 and the control means 200 and a boundary space between the connecting means 300 and the main body 100. The hinge portions 340 and 340' have thicknesses (T) larger than those of other members and widths (W) smaller than those of other members so that the connecting means 300 and the control means 200 are located at their normal positions when the control portion 220 of the control means 200 is placed in the control space portion 150 of the main body 100 and the cord C is received by the first, second, third, and fourth receptor holes 121, 221, 131, and 310.

[0031] That is, since the hinge portions 340 and 340' having large thicknesses (T) and small widths (W) are respectively provided on the boundary space between the connecting means 300 and the control means 200 and the boundary space between the connecting means 300 and the main body 100, when the control portion 220 of the control means 200 is placed in the control space portion 150 of the main body 100 from the state as shown in FIG. 4 to the state as shown in FIG. 7, the control portion 220 can be easily placed in the control space portion 150.

[0032] Reference numeral 400 represents elastic means, which is assembled with the connecting means 300 to hold, as shown in FIG. 8, the cord (C), having passed the first receptor hole 121 and the second receptor hole 131 of the main body 100, as shown in FIG. 7, for applying an elastic force to the control means 200. A through hole 410, the outer circumference of which contacts the protuberance 320 of the connecting means 300, is formed through the elastic means 400 so that the elastic means 400 is firmly assembled with the connecting means 300.

[0033] Reinforcing protuberances 420 for preventing the through hole 410 from being deformed are protruded from both sides of the through hole 410 of the elastic means 400.

[0034] Reference numeral **500** represents decoration means for covering the outer surfaces of the control means **200** and the connecting means **300** for ornamenting the outer appearance of the cord lock. The decoration means **500** includes through holes **510**, into which the protrusions **211** formed on the surface of the upper cover portion **210** are inserted by interference fit, formed through a portion thereof covering the control means **200**, and a fifth receptor hole **520**, which communicates with the fourth receptor hole **310** of the connecting means **300**, formed through a portion thereof covering the connecting means **300**.

[0035] An insert protrusion **530** is protruded from the upper portion of the inner surface of the decoration means **500**, and is inserted into the concave groove **223** of the control means **200** so as not to separate the decoration means **500** from the control means **200** when the decoration means **500** covers the control means **200** and the connecting means **300** by inserting the protrusions **211** into the through holes **510** by interference fit.

[0036] That is, the protrusions **211** of the control means **200** are inserted into the through holes **510** of the decoration means **500** by interference fit, and the insert protrusion **530** of the decoration means **500** is inserted into the concave groove **223** of the control means **200**, thereby allowing the decoration means **500** to be firmly assembled with the control means **200** and the connecting means **300** without any separation.

[0037] With reference to FIGS. **3** to **8**, the number of each of the protrusions **211** and the through holes **510** is four so that the cord lock has a shape of a beetle. However, the numbers of the protrusions **211** and the through holes **510** do not limited thereto. That is, as shown in FIG. **9**, the number of each of the protrusions **211** and the through holes **510** may be one. Accordingly, the present invention is not limited to the numbers and shapes of the protrusions **211** and the through holes **510**.

[0038] Hereinafter, the functions and effects of the above-described cord lock of the present invention will be described.

[0039] Since the main body **100**, the control means **200**, and the connecting means **300** are produced into one integral component by injection molding the cord lock of the present invention has decreased production costs and improved productivity.

[0040] Since the control portion **220** of the control means **200** is received by the control space portion **150** of the main body **100** by assembling the elastic means **400** with the connecting means **300** and applying a force to the control means **200** in the direction of an arrow A as shown in FIG. **6**, the cord lock of the present invention is easily assembled by anyone.

[0041] The cord lock of the present invention has an appearance of a beetle by inserting the protrusions **211** formed on the upper cover portion **210** of the control means **200** into the through holes **510** of the decoration means **500** by the interference fit, thereby having an attractive appearance while having a high quality.

[0042] The protuberance **320**, which is protruded from the connecting means **300**, is inserted into the elastic means **400** when the elastic means **400** is assembled with the connecting means **300**, thereby being capable of firmly assembling the elastic means **400** with the connecting means **300**.

[0043] The reinforcing protuberances **420** are protruded from both sides of the through hole **410** of the elastic means **400**, thereby increasing the endurance of the elastic means **400** without any deformation.

[0044] The control means **200** is elevated by the elastic force of the elastic means **400**, as shown in FIG. **8**, thereby easily controlling the length of the cord C by an one-touch manner when a user wants to adjust the length of the cord C, which was held by the cord lock of the present invention.

[0045] That is, when the decoration means **500** is pressed by the one-touch manner in order to control the length of the cord C, the third receptor hole **221** of the control means **200** coincides with the first and second receptor holes **121** and **131** of the main body **100**, as shown in FIG. **7**, thereby being capable of easily adjusting the length of the cord C.

[0046] When the decoration means **500** is pressed by the one-touch manner, the control unit **160** of the main body **100** contacts the surface of the decoration means **500**, thereby being capable of more easily and efficiently adjusting the length of the cord C.

INDUSTRIAL APPLICABILITY

[0047] As apparent from the above description, the present invention provides a cord lock comprising a main body, control means, and connecting means, which are produced into one integral component by injection molding thereby having decreased production costs and improved productivity. Further, the cord lock of the present invention comprises decoration means, which serves to ornament the external appearance thereof, and is pressed by an one-touch manner so as to release the holding of a cord, thereby being capable of easily adjusting the length of the cord and increasing convenience in use.

[0048] Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

1. A cord lock for adjusting the length of a cord used in clothes or bags, comprising:

- a main body for receiving the cord, including a bottom cover portion, an outer cover portion and an inner portion formed on the bottom cover portion, a control space portion formed between the outer cover portion and the inner portion, and an oval-shaped first receptor hole and an oval-shaped second receptor hole respectively formed through the outer cover portion and the inner portion for passing the cord;

- control means for adjusting the length of the cord, which had passed through the first receptor hole and the second receptor hole of the main body, including an upper cover portion provided with a plurality of protrusions, and a control portion protruded approximately perpendicularly from the end of the upper cover portion, received by the control space portion, and provided with a third receptor hole for passing the cord;

- connecting means produced integrally with the control means and the main body by injection molding for integrally connecting the control means and the main body, and provided with a fourth receptor hole for passing the cord;

- elastic means assembled with the connecting means to hold the cord, having passed through the first receptor hole and the second receptor hole of the main body, for applying an elastic force to the control means, and provided with a through hole, the outer circumference of which

contacts a protuberance of the connecting means, so that the elastic means is firmly assembled with the connecting means; and

decoration means for covering the outer surfaces of the control means and the connecting means to ornament the outer appearance of the cord lock, and including through holes, into which the protrusions formed on the surface of the upper cover portion of the control means are inserted by interference fit, and a fifth receptor hole, which is formed through a portion thereof covering the connecting means so as to communicate with the fourth receptor hole of the connecting means.

2. The cord lock as set forth in claim 1, wherein: side cover portions are respectively provided on both sides of the outer cover portion and the inner portion to define the external appearance of the main body; and a control unit for controlling the movement of the decoration means is provided on the upper surface of the outer cover portion.

3. The cord lock as set forth in claim 1, wherein the protuberance is protruded from the periphery of the fourth receptor hole of the connecting means so that the elastic means is firmly assembled with the connecting means therethrough.

4. The cord lock as set forth in claim 1, wherein hinge portions, which have thicknesses larger than those of other members and widths smaller than those of other members so that the connecting means and the control means are located at their normal positions when the control portion of the control means is placed in the control space portion of the main body and the cord is received by the first, second, third, and fourth receptor holes, are respectively provided on a boundary space between the connecting means and the control means and a boundary space between the connecting means and the main body.

5. The cord lock as set forth in claim 1, wherein reinforcing protuberances for preventing the through hole from being deformed are protruded from both sides of the through hole of the elastic means.

6. The cord lock as set forth in claim 1, wherein an insert protrusion, which is inserted into a concave groove of the control means so as not to separate the decoration means from the control means when the decoration means covers the control means and the connecting means by inserting the protrusions into the through holes by interference fit.

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