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(54) **LOCKING DEVICE CAPABLE OF SECURING A BAG**

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(57) **ABSTRACT**

Disclosed is a locking device capable of securing a bag for securing both an item storing body and a cover used to seal an opening of a bag in a closed configuration to protect the contents within the bag. The cover assembles a locking insertion member and the elastic fastening member. The item storing body assembles a fastening member, a lower cap member, an elastic locking member and an upper cap member.

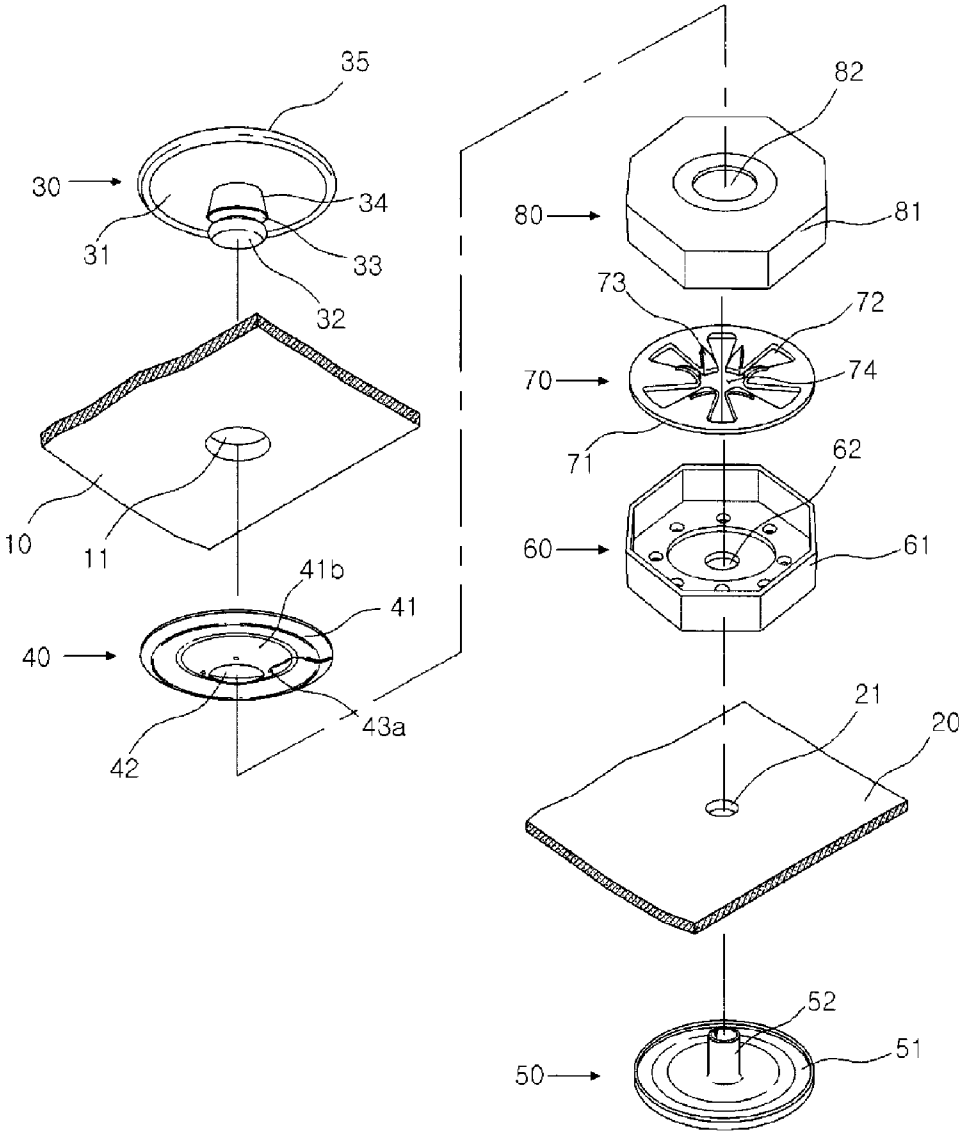

Fig. 1

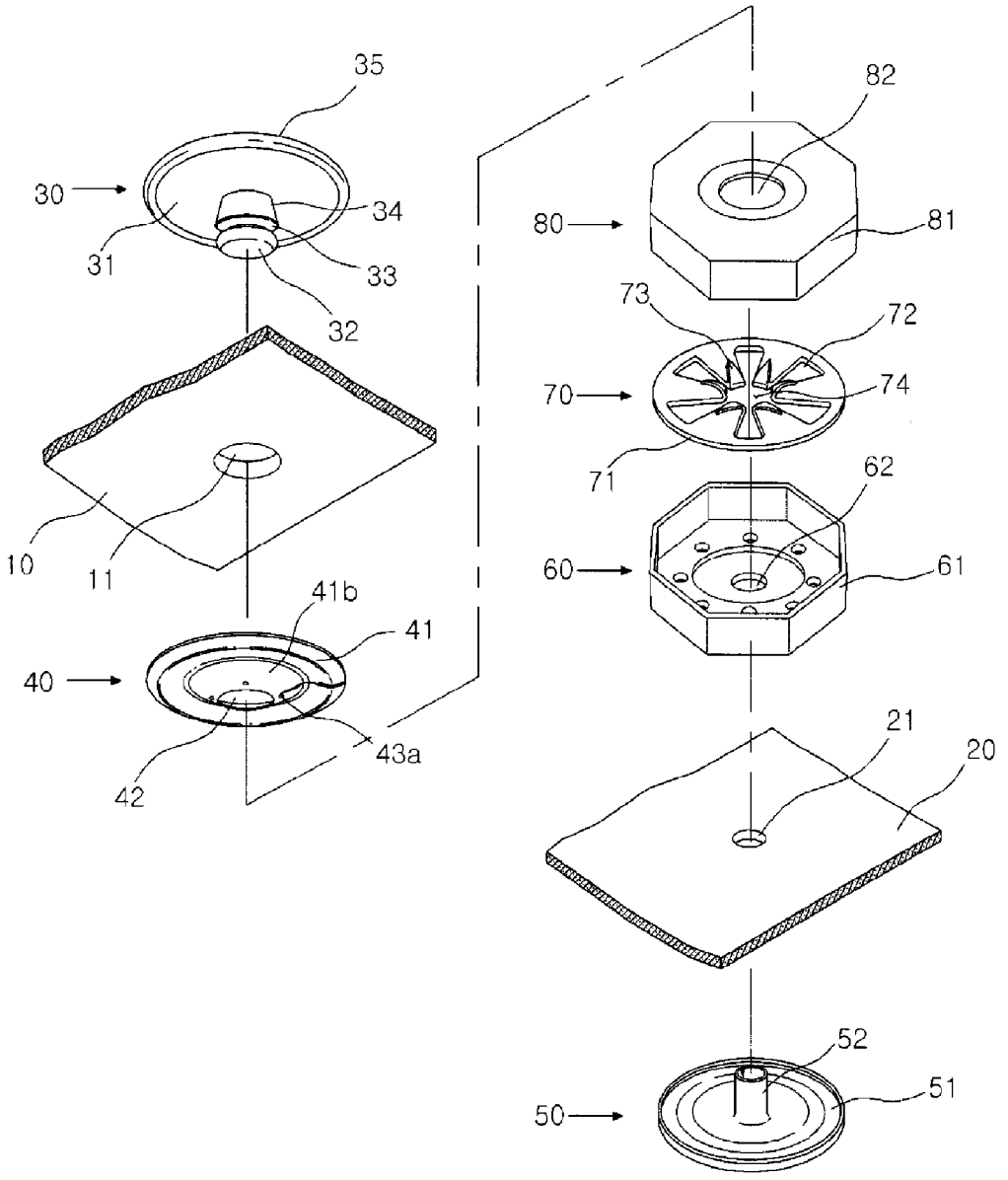
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Fig. 2

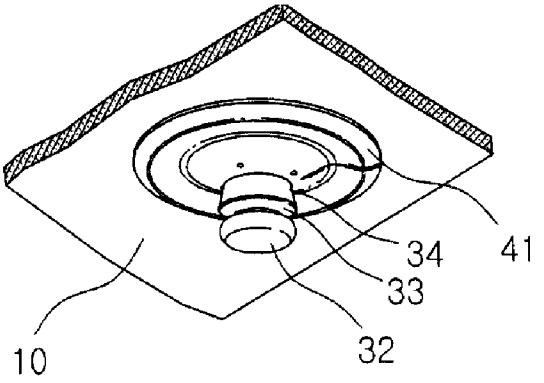


Fig. 3

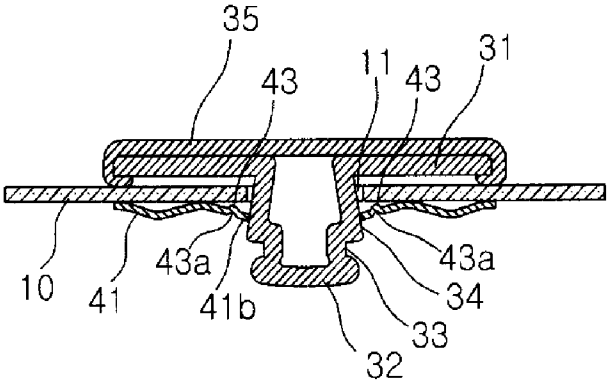
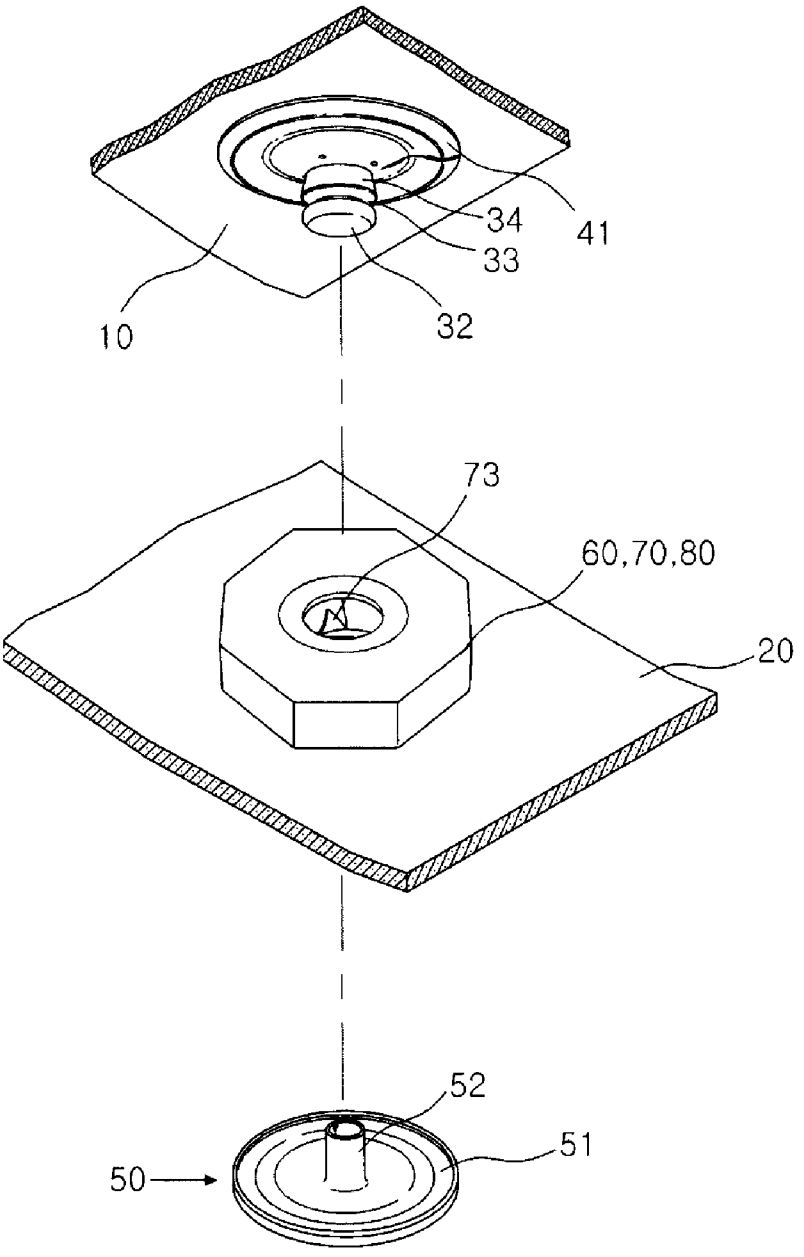


Fig. 4



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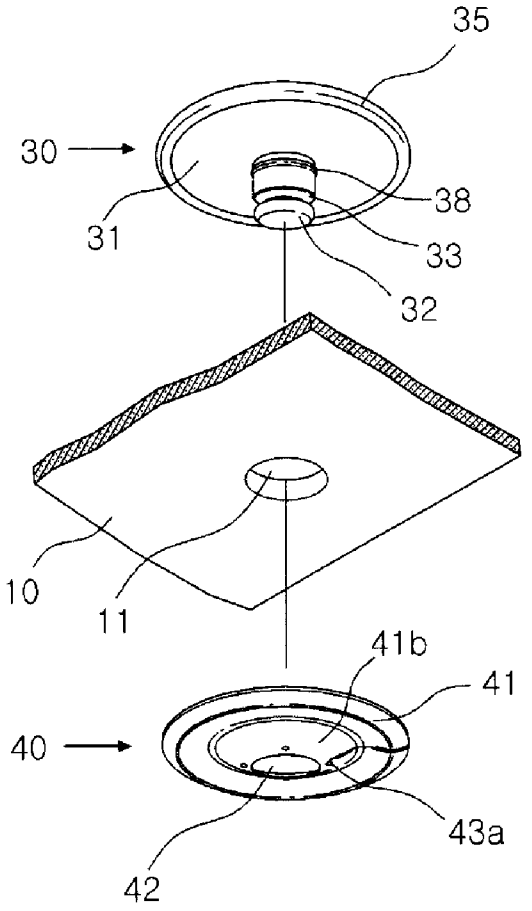

Fig. 6

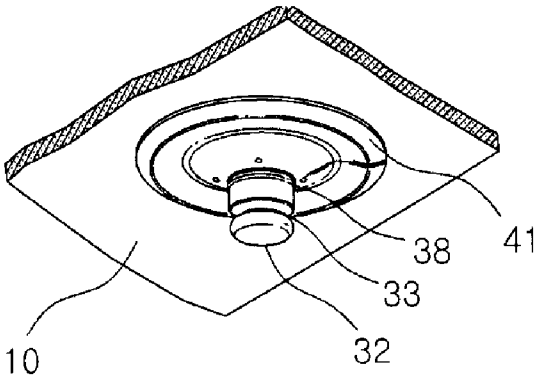

Fig. 7

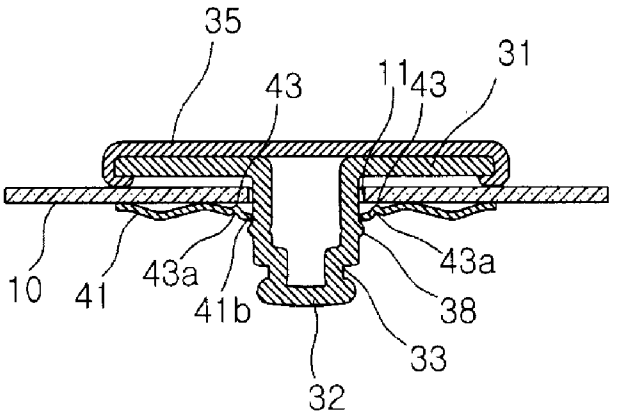

Fig. 8

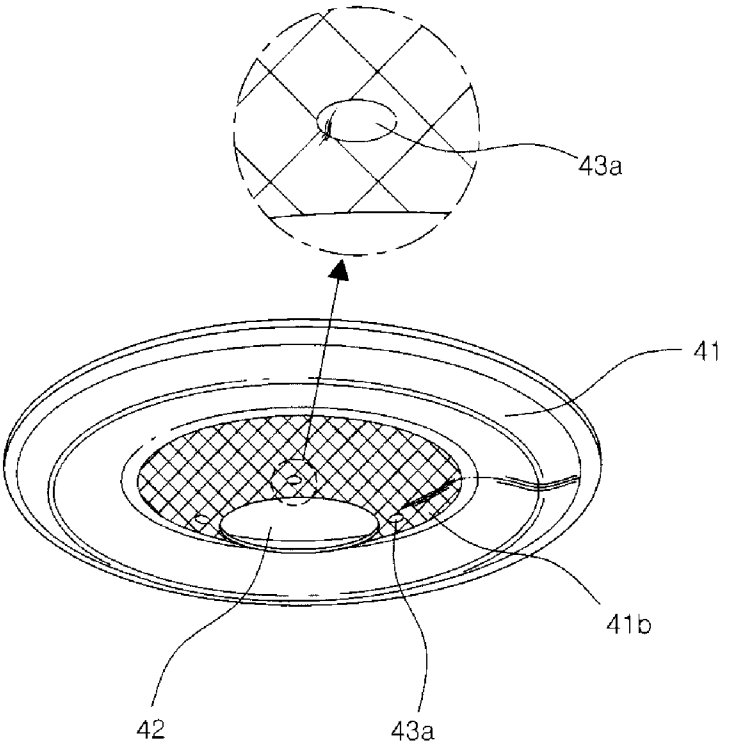

Fig. 9

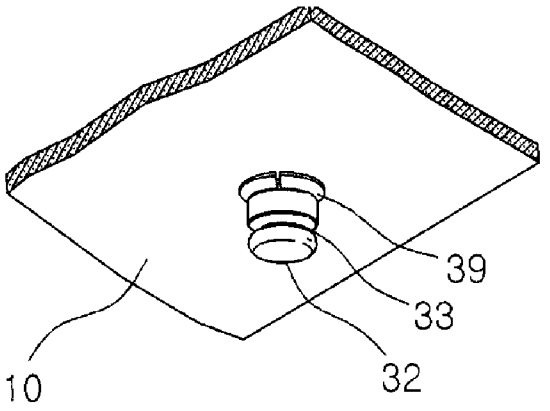

Fig. 10

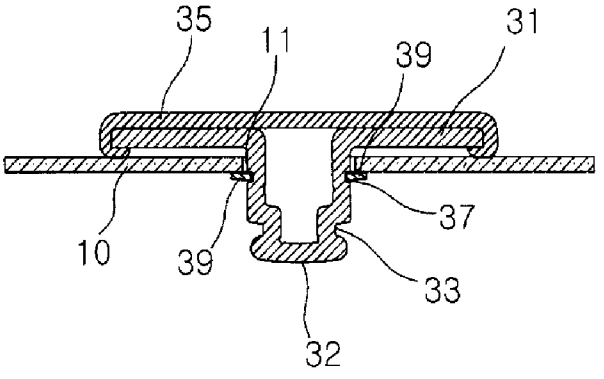

Fig. 11

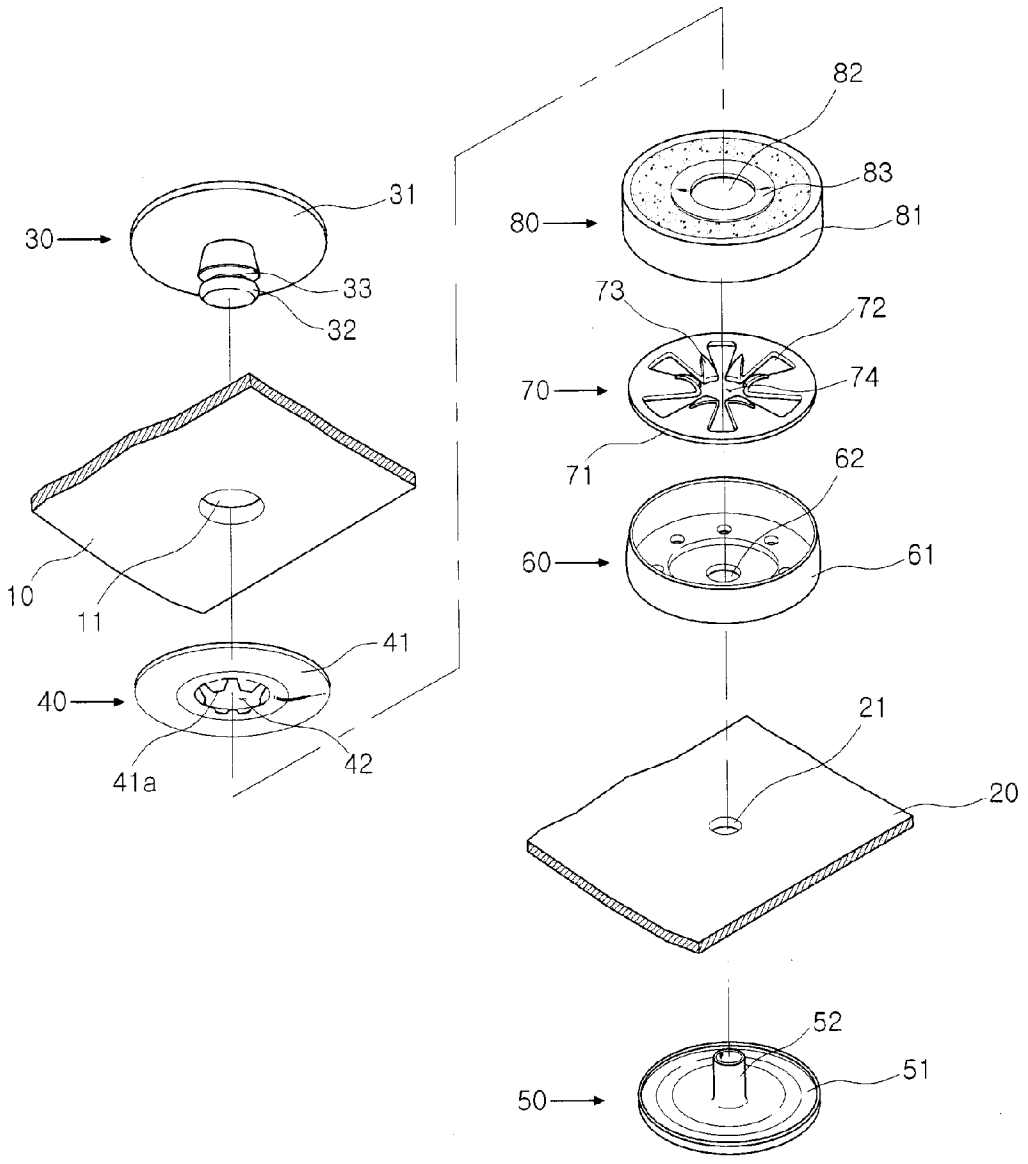
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Fig. 12

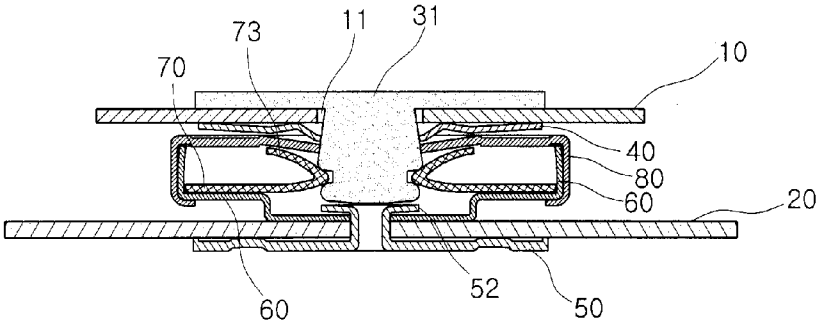


Fig. 13

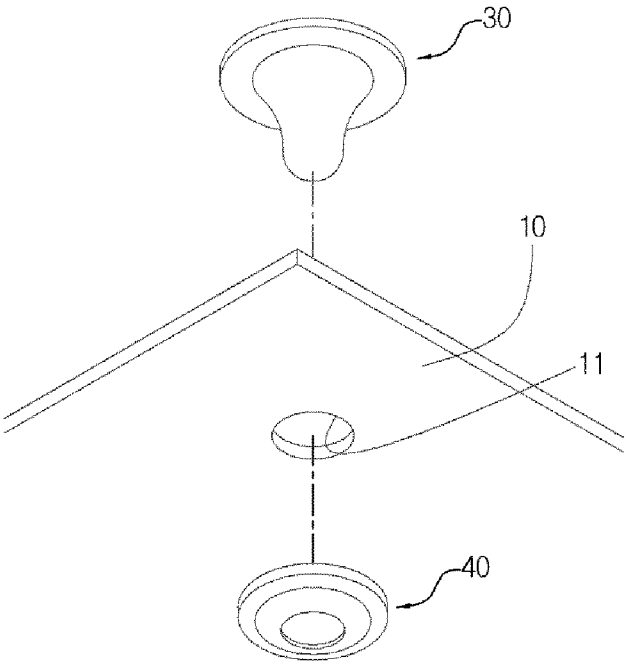
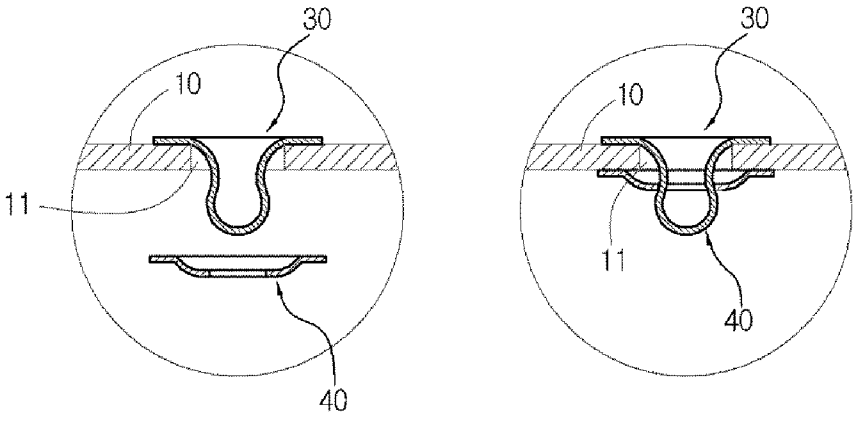


Fig. 14



LOCKING DEVICE CAPABLE OF SECURING A BAG

TECHNICAL FIELD

[0001] The present invention relates to a locking device capable of securing a bag for securing both a body and a cover used to seal an opening of a bag in a closed configuration to protect the contents within the bag.

BACKGROUND OF THE INVENTION

[0002] People use bags, for example, handbags, backpacks, brief cases and computer bags, to store and carry various items. The items within a bag may include personal items, for example, mirrors, identifications, phones, computers. People may bring a bag to various different locations, for example, work, school, gym and vacation. If an individual lost or had their bag or the contents of the bag stolen the individual may suffer financial and emotional hardships.

[0003] In general, a conventional bag comprises a body for storing variable articles, and a cover for locking the opening of the body. The body forms a groove having a magnetic force and the cover forms a protrusion made of iron etc., for inserting into the groove of the body. When the protrusion is inserted into the groove, the protrusion is combined with the groove for keeping the locking state by the magnetic force.

[0004] However, when the body stores the articles over its capacity the protrusion may be separated from the groove since the magnetic force reaches its limit. This causes the loss of the articles from the body.

SUMMARY OF THE INVENTION

[0005] The present invention has been invented to solve the conventional problems, an object of the present invention is to provide a locking device capable of securing a bag that a cover is softly and precisely locked to a body and is prevented the separation from the body without intention.

[0006] To achieve the above object a locking device capable of securing a bag of the present invention comprises: a locking device capable of securing a bag comprising: a cover formed a hole; a locking insertion member including a body, a locking insertion protrusion having a locking groove and a tapered portion for inserting to the hole of the cover, and a reinforcement element covered the body for increasing strength; an elastic fastening member including a body, a hole for inserting the locking insertion protrusion passed through the hole of the cover so that the locking insertion member is assembled via the cover, a downwardly tapered surface, an embossing for preventing an excessive contact to the cover, wherein said elastic fastening member is formed its end with the bending portion for keeping a gap from the cover, and is formed with a concave portion at the opposite side of the embossing; an item storing body formed a hole; a fastening member including a body, and a protrusion for inserting into the hole of the item storing body; a lower cap including a body, and a hole for inserting the protrusion of the fastening member passed through the hole of the item storing body; an elastic locking member including a circular plate fastened to the inner bottom of the lower member, wherein said circular plate forms an elastic insertion portion for inserting the protrusion of the locking insertion member fastened to the cover, a tapered surface having at least one or more slopes upwardly except the elastic insertion portion, and a hole for the locking and unlocking of the locking groove of the locking insertion member fastened to the cover; and an upper cap including a body for covering the lower cap, and a hole for passing through the protrusion of the locking insertion member and the protrusion of the fastening member.

[0007] The tapered portion of the elastic locking member has at least one or more predetermined slopes. The protrusion of the locking insertion member is formed to have a pin shape and the elastic fastening member is formed for inserting the protrusion of the locking insertion member, so that the protrusion is not separated from the elastic fastening member by an extended diameter of the protrusion. The locking insertion protrusion of the locking insertion member has another protrusion for preventing the separation from the cover and the elastic fastening member. The locking insertion protrusion forms a groove so that a ring is inserted thereto for preventing the separation from the cover and the elastic fastening member. The elastic fastening member forms dissected protrusions on the hole, said protrusions being bent toward the outer surface of the protrusion of the locking insertion member. The upper member forms a tapered surface that is upwardly slope from the hole.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. **1** is a disassembly view according to a first embodiment of the present invention.

[0009] FIG. **2** is an assembly view of a cover, an inserting plate and an elastic plate in FIG. **1**.

[0010] FIG. **3** is a cross-sectional view of FIG. **2**.

[0011] FIG. **4** is a disassembly view of a cover, a fixing plate, a lower cap and an elastic plate and an upper cap.

[0012] FIG. **5** is a disassembly view of a cover, an inserting plate and an elastic plate according to a second embodiment of the present invention.

[0013] FIG. **6** is an assembly view of FIG. **5**.

[0014] FIG. **7** is a cross-sectional view of FIG. **6**.

[0015] FIG. **8** is a detailed view of the elastic plate according to the first and second embodiments of the present invention.

[0016] FIG. **9** is an assembly view of a cover, an inserting plate and an elastic plate according to a third embodiment of the present invention.

[0017] FIG. **10** is a cross-sectional view of FIG. **9**.

[0018] FIG. **11** is a disassembly view according to a fourth embodiment according to a present invention.

[0019] FIG. **12** is an assembly sectional view of FIG. **11**.

[0020] FIGS. **13** and **14** are views of another embodiment of the locking insertion member and the elastic fastening member for the cover according to the first to fourth embodiments of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] A detailed description of the present invention will now be described with reference to the drawings.

[0022] A locking device capable of securing a bag according to the present invention is for the items storing bag comprising a cover **10** used to seal an opening of a bag and a body **20** for storing various items therein.

[0023] A first embodiment of the present invention will now be described. As shown in FIGS. **1** to **4**, the cover **10** forms a hole **11**. The hole **11** serves so that a locking insertion member **30** and an elastic fastening member **40** are assembled to the cover **10**. When they are assembled the locking inser-

tion member **30** is positioned outside of the cover **10** and the elastic fastening member **40** is positioned inside of the cover **10**.

[0024] The locking insertion member **30** includes a body **31** covered its top with a reinforcement element **35** for its strength, and a locking insertion protrusion **32** formed on the body **31** for the insertion to the hole **11**. The locking insertion protrusion **32** forms a tapered surface **34** toward the cover **10** to have a increased diameter gradually and forms a locking groove **33**. The top of the tapered surface **34** is its diameter larger than that of the hole **11**.

[0025] The elastic fastening member **40** includes a body **41** and a hole **42**. The hole **42** enables the locking insertion member **30** to be fastened to the elastic fastening member **40** via the cover **10** since the locking insertion protrusion **32** of the locking insertion member **30** is inserted into the hole **42** after passed through the hole **11** of the cover **10**. The body **41** forms a downwardly tapered surface **41***b* for preventing the separation of the locking insertion member **30**.

[0026] The elastic fastening member **40** is formed its end with the bending portion for keeping a gap from the cover **10**. The gap serves to prevent a damage of the cover **10**. Furthermore, the elastic fastening member **40** forms an embossing **43** for preventing an excessive contact to the cover **10**. These structures of the elastic fastening member **40** serve to prevent a damage of the cover **10**. The embossing **43** is formed in the manner of a press working and is formed its opposition side with a concave portion **43***a*.

[0027] Meanwhile, as shown in FIGS. **13** and **14**, it is possible that the protrusion **32** of the locking insertion member **30** is formed to have a pin shape and the elastic fastening member **40** is formed for inserting the protrusion **32**. In this case, after the protrusion **32** is inserted into the fastening elastic member **40**, the lower part of the protrusion **32** is its shape changed to have an extended diameter when the top of the protrusion **32** is pressed down using a tool. Therefore, the protrusion **32** is not separated from the elastic fastening member **40**.

[0028] The body **20** forms a hole **21** for assembling a fastening member **50**, a lower member **60**, an elastic locking member **70** and an upper member **80**.

[0029] The fastening member **50** includes a body **51**, and a fastening protrusion **52** for securing the lower member **60** via the hole **21**. The protrusion **52** is inserted into a hole **62** of the lower member **60**, and thereafter its top is pressed down to have a larger diameter than that of the hole **62**. The portion pressed down of the protrusion **52** is tightly contacted to the inner bottom surface of the lower member **60** so that the fastening member **50** and the lower member **60** are tightly fastened each other.

[0030] The lower member **60** includes a body **61**, and a hole **62** for inserting the protrusion **52** of the fastening member **50** passed through the hole **21** of the body **20**.

[0031] The elastic locking member **70** is made of metal, non-metal or plastic. The elastic locking member **70** includes a circular plate **71** fastened to the inner bottom of the lower member **60**. The circular plate **71** forms an elastic insertion portion **72** having a triangle shape for inserting the protrusion **32** of the locking insertion member **30** fastened to the cover **10**. The plate **71** also forms a tapered surface **73** having a certain slope upwardly except the elastic insertion portion **72**, and a hole **74** for the locking and unlocking of the locking groove **33** of the locking insertion member **30** fastened to the cover **10**. The hole **74** opens in the central portion of the elastic insertion portion **72**.

[0032] The elastic locking member **70** can forms a plurality of tapered surfaces **73** so that the protrusion **32** can be softly separated from the elastic locking member **70** by the elastic force so that the damage such as its breakdown can be prevented.

[0033] The upper member **80** includes a body **81** for covering the lower member **60**, a hole **82** for inserting the protrusion **32** of the locking insertion member **30** fastened to the cover **10** and for inserting the protrusion **52** of the fastening member **50** fastened to the body **20**, and a tapered surface **83** having a certain slope upwardly from the hole **82** for easily inserting the protrusion **31** to the hole **82**.

[0034] Next, the assembly steps of the locking device capable of securing the bag having the above constructions will now be described.

[0035] As shown in FIGS. **1** to **3**, the protrusion **32** of the locking insertion member **30** is inserted into the hole **11** of the cover **10** and is inserted into the hole **42** by the elastic force of the elastic fastening member **40** without difficulty. Then the protrusion **32** can be prevented the separation from the elastic fastening member **40** because the tapered surface **34** is its top diameter larger than that of the hole **42**. Therefore, the locking insertion member **30** and the elastic fastening member **40** are assembled to the cover **10**.

[0036] As shown in FIG. **4**, under a state that the elastic locking member **70** is put on the inside bottom of the lower member **60**, the lower member **60** is covered with the upper member **80**. The protrusion **52** is inserted into the hole **21**, then the top of the protrusion **52** is passed through the hole **62**. Under this state, the top of the protrusion **52** is pressed down so that the top diameter of the protrusion **52** became larger than that of the hole **62**, and accordingly the fastening member **50** and the lower member **60** are combined each other. As a result of that, the fastening member **50**, the lower member **60**, the elastic locking member **70** and the upper member **80** are assembled to the body **20**.

[0037] Next, the locking operation of the device will now be described.

[0038] The protrusion **32** is inserted into the hole **74** through the hole **82** so that the locking groove **33** of the protrusion **32** is locked by the hole **74**.

[0039] Since the tapered portion **73** keeps a certain slope upwardly from the hole **74** under the state that the elastic locking member **70** is tightly contacted to the inside bottom of the lower member **60**, the separation of the protrusion **32** can be prevented. That is, to be separated the protrusion **32** from the hole **74**, the tapered portion **73** should be gone upwardly according to the movement of the protrusion **32**. However, the movement like that is not easily possible due to the slope degree of the tapered portion **73**. Therefore, the locking state can be kept.

[0040] The unlocking operation is adversely performed of the operation of the locking.

[0041] A second embodiment of the present invention will now be described. The locking device capable of securing the bag according to the second embodiment of the present invention, as shown in FIGS. **5** to **7**, changes the structure of the locking insertion member **30**.

[0042] The locking insertion member **30** forms a fastening protrusion **38** on the lower surface of the protrusion **32** for preventing the separation from the cover **10**.

[0043] When the protrusion **32** of the locking insertion member **30** is inserted into the hole **42** of the elastic fastening member **40** via the hole **11**, the fastening protrusion **38** is also passed through the hole **42** via the hole **11**. Therefore, since the diameter of the protrusion **38** is larger than that of the hole **42**, the locking insertion member **30** is fastened to the elastic fastening member **40** via the cover **10**.

[0044] A third embodiment of the present invention will now be described. The locking device capable of securing the bag according to the third embodiment of the present invention, as shown in FIGS. **9** and **10**, changes the structure of the locking insertion member **30**.

[0045] The locking insertion member **30** forms a groove **37** on the lower surface of the protrusion **32** for being inserted with a C-shaped ring **39**. The ring **39** has a lager diameter than that of the protrusion **32**. Therefore, when the ring **39** is inserted into the groove **37**, the surface surrounded with the ring **39** is its diameter larger than that of the surface of the protrusion **32**.

[0046] Therefore, the locking insertion member **30** is prevented the separation from the cover **10** and the elastic fastening member **40**.

[0047] Under a state that the protrusion **32** of the locking insertion member **30** is inserted into the hole **11** of the cover **10**, the ring **39** is combined to the groove **37** so that the locking insertion member **30** is prevented the separation from the elastic fastening plate **40**.

[0048] A fourth embodiment of the present invention will now be described.

[0049] The locking device capable of securing the bag according to the fourth embodiment of the present invention, as shown in FIGS. **11** and **12**, changes the structures of the elastic fastening member **40** and the upper member **80**.

[0050] The elastic fastening member **40** forms dissected protrusions **41***a* on the hole **42**. The protrusions **41***a* are bent toward the outer surface of the protrusion **32** of the locking insertion member **30**.

[0051] The upper member **80** forms a tapered surface **83** that is upwardly slope from the hole **82**. The tapered surface **83** serves that the protrusion **32** is guided and easily inserted into the hole **82**.

[0052] Under a state that the locking groove **33** of the protrusion **32** is protruded outside of the cover **10**, the locking insertion member **30** is assembled to the elastic fastening member **40** across the cover **10** by the tapered portion of the protrusion **32** and the end of the protrusion **31***a* since the end of the protrusion **41***a* is kept the contact state with the outer face of the protrusion **32**.

[0053] Furthermore, since the tapered portion **83** is formed to have a downwardly slope toward the hole **82** the protrusion **32** is easily inserted into the hole **82** using the tapered portion **83**.

What is claimed :

1. A locking device capable of securing a bag comprising:

a cover formed a hole;

a locking insertion member including a body, a locking insertion protrusion having a locking groove and a tapered portion for inserting to the hole of the cover, and a reinforcement element covered the body for increasing strength;

an elastic fastening member including a body, a hole for inserting the locking insertion protrusion passed through the hole of the cover so that the locking insertion member is assembled via the cover, a downwardly tapered surface, an embossing for preventing an excessive contact to the cover, wherein said elastic fastening member is formed its end with the bending portion for keeping a gap from the cover, and is formed with a concave portion at the opposite side of the embossing;

an item storing body formed a hole;

a fastening member including a body, and a protrusion for inserting into the hole of the item storing body;

a lower cap including a body, and a hole for inserting the protrusion of the fastening member passed through the hole of the item storing body;

an elastic locking member including a circular plate fastened to the inner bottom of the lower member, wherein said circular plate forms an elastic insertion portion for inserting the protrusion of the locking insertion member fastened to the cover, a tapered surface having at least one or more slopes upwardly except the elastic insertion portion, and a hole for the locking and unlocking of the locking groove of the locking insertion member fastened to the cover; and

an upper cap including a body for covering the lower cap, and a hole for passing through the protrusion of the locking insertion member and the protrusion of the fastening member.

2. The device according to claim **1**, wherein the tapered portion of the elastic locking member has at least one or more predetermined slopes.

3. The device according to claim **1**, wherein the protrusion of the locking insertion member is formed to have a pin shape and the elastic fastening member is formed for inserting the protrusion of the locking insertion member, so that the protrusion is not separated from the elastic fastening member by an extended diameter of the protrusion.

4. The device according to claim **1**, wherein the locking insertion protrusion of the locking insertion member has another protrusion for preventing the separation from the cover and the elastic fastening member.

5. The device according to claim **1**, wherein the locking insertion protrusion forms a groove so that a ring is inserted thereto for preventing the separation from the cover and the elastic fastening member.

6. The device according to claim **1**, wherein the elastic fastening member forms dissected protrusions on the hole, said protrusions being bent toward the outer surface of the protrusion of the locking insertion member.

7. The device according to claim **1**, wherein the upper member forms a tapered surface that is upwardly slope from the hole.

* * * * *