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Amended claims in accordance with Rule 137(2) EPC.

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(54) **Bag structure**

(57) A bag structure includes a main body (5) which has an opening (51) at the upper end, two opposing surfaces (53, 54), two folded portions (530, 540) formed on the surfaces (53, 54) close to the opening (51), and handles (531, 541) below the folded portions (530, 540) to facilitate hand grasping and hanging. When in use, the

folded portions (530, 540) are folded and overlapped to form a folded edge (55); the handles (531, 541) are lifted to wrap the folded edge (55) to increase the thickness above the handles (531, 541) so that support strength increases and grasping comfort improves. The bag thus formed can be fabricated easier at a lower cost in mass production, and can be neatly folded and stored.

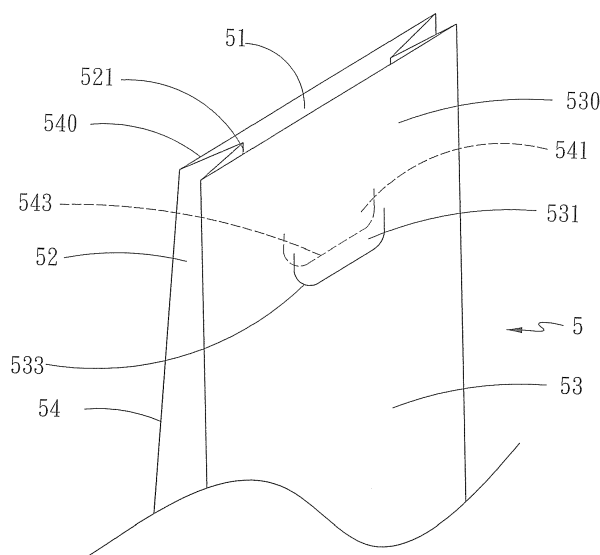


Fig. 6

Description

FIELD OF THE INVENTION

[0001] The present invention relates to a bag structure and particularly to a bag to gather and hold goods together and facilitate carrying or hanging.

BACKGROUND OF THE INVENTION

[0002] Bags are widely used in people's daily life. Cheap, sturdy, easy to carry and clean are common desirable features of a bag for buyers or sellers. These days many buyers also want the bag eco-friendly without creating environmental pollution after use, small size, easy to store and manage. Nowadays plastic bags are banned in many shopping centers and food stores, but these places provide bags with a flat opening as the alternatives. While such bags can gather goods together, they do not have handles for holding, hence are difficult to carry. They usually have to be carried by users in a holding or grasping manner.

[0003] Please refer to FIGS. 1 and 2 for a conventional bag 1a with a flat opening 2a. It can be fabricated easily at a lower cost. When in use, the opening 2a generally is folded and carried by a user with a hand. When the goods held in the bag 1a is heavier, one corner of the folded opening 2a has to be folded again to form a folded angle 21a to increase the support strength. But the bag 1a still has to be carried by holding or grasping during walking or taking vehicles and becomes a troublesome burden, especially when the road condition is poor or a crowded condition happened in the vehicles, or a lot of goods are held in the bag. The bag could be easily slipped or dropped from user's hands and cause difficulty in carrying.

[0004] To remedy the problem of difficult carrying, another type of flat opening bag 1b was developed and produced as shown in FIG. 3. The bag 1b has a perforated slot near the opening 2b to form a handle 4b. The conventional flat opening bag 1b is usually fabricated from plastics or paper. For the plastic bag, as the plastics are flexible, the plastic portion above the handle 4b tends to be stretched thinner after the bag 1b is loaded with goods. Hence the bag 1b is deformed and difficult to manage for storing, and the structure of the handle 4b is also changed that creates concerns for reuse. Moreover, as the flat opening bag 1b is made of paper, the handle 4b is the perforated slot which damages the structural support strength around the opening 2b and easily causes fracture at the handle 4b and results in a greater problem in use.

[0005] FIG. 4 shows still another type of a conventional bag 1c with twisted ropes 3c fastened to the opening 2c. Fabricating such a bag requires a tedious process and incurs a higher cost. Moreover, the loading of the bag 1c concentrates on the fastening portion of the twisted ropes 3c at the opening 2c which is easily fractured. Also the

twisted ropes 3c of the bag 1c cannot be perfectly fitted to the opening 2c while folded, hence scars could be occurred while transportation or storage, and the appearance is suffered.

[0006] FIG. 5 shows yet another type of a conventional flat opening bag 1d which has a handle 4d and patches 41d bonded to the handle 4d to increase the strength. As it requires extra production process to add the patch 41d, the cost is higher. In the event that the patch 41d is made from a non-degradable material, environmental pollution occurs.

SUMMARY OF THE INVENTION

[0007] The primary object of the present invention is to overcome the shortcomings of the conventional flat opening bags that are not sturdy and inconvenient to use. The present invention provides an improved bag that can be produced at a lower cost and easy to hold or hang to meet actual use requirements.

[0008] To achieve the foregoing object, the present invention provides a bag structure which includes a main body with two surfaces opposing each other, the two surfaces have folded portions close to an opening and a handle beneath the folded portions. The handle is formed by punching and cutting to become split line in advance. The handle can be formed in a circular, square, arched or other geometrical shape to facilitate insertion of user's fingers for carrying or hanging on a holding hook on a transportation vehicle or article, or also can be formed in a special design as desired.

[0009] When the bag of the invention is in use for holding goods, the folded portions are folded to a plurality of folds towards the surface until reaching an upper side of the two handles to form a folded edge to close the upper end of the main body, then the lower edges of the two handles are lifted upwards to be overlapped and bent towards the surface. The two lifted handles are formed respectively a slot on the surface corresponding to each other. The folded edge is held by the two lifted handles to prevent it from losing and also increases the thicknesses of the upper edges of the two slots. Thus the invention does not damage the structure of the bag and has the folded edge formed by the folded portions to increase the thicknesses above the handles to enhance support strength above the handles and improve user's grasping comfort. When the bag is loaded with goods, the portions above the handles are less likely to be deformed or fractured.

[0010] Moreover, protective patches may be added to attach the inner sides of the surfaces at the borders of the two slots to further increase the support strength. The protective patch is a frame and can enhance the support strength of the handle and folded edge at the opening to make the bag sturdier.

[0011] In short, the bag according to the invention provides many benefits, notably:

1. The handles are formed by punching during production, and can be made faster at a lower cost.
2. The bag of the invention can be carried by grasping when holding goods, thus provides the convenience of the bag.
3. The bag of the invention can be hung on a holding hook to facilitate carrying while driving or riding a transportation vehicle.
4. The handles of the invention are folded and overlapped to increase the support strength of the bag opening without creating extra fabrication process, thus the bag can be made at a lower cost like a conventional flat opening bag, and also is easier to store and transport.

[0012] The foregoing, as well as additional objects, features and advantages of the invention will be more readily apparent from the following detailed description, which proceeds with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013]

FIG. 1 is a perspective view of a conventional flat opening bag with a folded opening.
 FIG. 2 is a perspective view of a conventional flat opening bag with a folded angle.
 FIG. 3 is a perspective view of a conventional flat opening bag with a perforated handle.
 FIG. 4 is a perspective view of a conventional flat opening bag with twisted ropes.
 FIG. 5 is a perspective view of a conventional flat opening bag with reinforced patches on the handles.
 FIG. 6 is a perspective view of the flat opening bag according to the invention.
 FIG. 7 is a schematic view of the invention to manage an opening and handles of the bag in a use condition.
 FIG. 8 is a perspective view of the invention with a user's fingers in a grasping condition.
 FIG. 9 is a schematic view of the invention for hanging the bag on a holding hook on a transportation vehicle in a use condition.
 FIG. 10 is a schematic view of another embodiment of the invention with protective patches attached to the borders of the handles.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] Please refer to FIG. 6, the bag structure according to the invention includes a main body 5 which has a closed lower end and an opening 51 at an upper end, and two sides 52 forming respectively a concaved folded line 521 along the direction of the main body 5, and two surfaces 53 and 54 at the front end and rear end opposing each other. The surfaces 53 and 54 have respectively a

folded portion 530 and 540 close to the opening 51, and also a handle 531 and 541 below the folded portions 530 and 540 disposed between the two folded lines 521. In this embodiment, the handles 531 and 541 have upper sides connected to the surfaces 53 and 54, and lower edges can form split lines 533 and 543 by punching and cutting or perforating multiple apertures in advance. The handles 531 and 541 may be formed in circular, square, arched or other geometrical shapes without special restriction. Thus the handles 531 and 541 and slots 532 and 542 are severed to improve practicality and usability of the bag.

[0015] Referring to FIG. 7, when the bag of the invention is in use, the folded portions 530 and 540 are folded in multiple folds towards the surface 53 until reaching the upper sides of the handles 531 and 541 to form a folded edge 55 to close the upper end of the main body 5; next, lift lower edges of the handles 531 and 541 from the surfaces 53 and 54 in a overlapped manner, and bend towards the surface 53 to form corresponding slots 532 and 542 on the surfaces 53 and 54 where the handles 531 and 541 have been lifted; the folded edge 55 is held by the lifted handles 531 and 541 to prevent the folded edge 55 from loosing and also increases the thickness of the upper edges of the slots 532 and 542.

[0016] Referring to FIG. 8, the handles 531 and 541 are designed for grasping by user's fingers 6 by passing through the slots 532 and 542. As the folded edge 55 is wrapped or held by the handles 531 and 541, the folded edge 55 does not loose and also can decrease the pressure on the fingers 6. Thus carrying the bag is more comfortable without incurring much pressure or pain to the user's fingers 6.

[0017] Referring to FIG. 9, the slots 532 and 542 formed by the handles 531 and 541 also can be hung on a holding hook 71 of a transportation vehicle 7 such as a motorcycle or an article (not shown in the drawings). With the holding hook 71 holding the handles 531 and 541 on the folded edge 55, the folded edge 55 is less likely to be loosed and the pressure on the holding hook 71 from the main body 5 also is reduced so that the handles 531 and 541 are less likely to be broken or damaged.

[0018] Refer to FIG. 10 for another embodiment of the invention that provides protective patches 8 on the inner sides of the surfaces 53 and 54 and at the borders of the slots 532 and 542 to enhance support strength of the handles 531 and 541. When the main body 5 is loaded with goods, the weight of goods does not concentrate on the two slots 532 and 542 so that the handles 531 and 541 are less likely to be deformed or broken.

Claims

1. A bag structure at least **characterized by** a main body (5) which has a closed lower end and an opening (51) at an upper end, two surfaces (53, 54) at a front end and a rear end opposing each other, folded

portions (530, 540) on the surfaces (53, 54) close to the opening (51) corresponding to each other, handles (531, 541) located below the folded portions (530, 540) corresponding to each other and slots (532, 542) formed by lifting lower edges of the handles (531, 541) upwards from the surfaces (53, 54).

2. The bag structure of claim 1, wherein the main body (5) has two sides (52) formed respectively a concaved folded line (521) along the direction of the main body (5), the handles (531, 541) being located between the two folded lines (521).
3. The bag structure of claim 1 or 2, wherein the handles (531, 541) are cut by punching in advance.
4. The bag structure of any of the preceding claims, wherein the handles (531, 541) are split lines formed by perforating apertures.
5. The bag structure of any of the preceding claims, wherein the surfaces (53, 54) respectively have an inner side attached by a protective patch (8) at the border of the slot (532, 542) to enhance support strength.
6. The bag structure of claim 5, wherein the protective patch (8) is a frame.

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Amended claims in accordance with Rule 137(2) EPC.

1. A bag structure comprising:

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a main body (5) which has a closed lower end and an opening (51) at an upper end, a surface (53) at a front end and a surface (54) at rear end, said surfaces (53, 54) being opposite to each other,

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folded portions (530, 540) on the surfaces (53, 54) close to the opening (51) corresponding to each other, and

handles (531, 541) located below the folded portions (530, 540) corresponding to each other, wherein

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said handles (531, 541) have upper sides connected to the surfaces (53, 54) and lower edges formed as split lines (533, 543) by punching and cutting or by perforating apertures into said surfaces (53, 54) in advance to thereby form slots (532, 542),

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said handles are formed by lifting said lower edges of the handles (531, 541) upwards from the surfaces (53, 54), and

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attached to inner sides of said surfaces (53, 54) are protective patches (8), each surrounding a slot (532, 542) to enhance support strength,

characterized in that said split lines are formed as well in said protective patches (8) to thereby form apertures corresponding to said apertures in said surfaces (53, 54) wherein the surfaces (53, 54) and said protective patches (8) are each made of a flexible material so that said lower edges of the handles (531, 541) can be lifted and folded together with lower edges of said protective patches (8) formed by said split lines in said protective patches (8).

2. The bag structure of claim 1, wherein the main body (5) has two sides (52) formed respectively a concaved folded line (521) along the direction of the main body (5), the handles (531, 541) being located between the two folded lines (521).

3. The bag structure of claim 1 or 2, wherein each protective patch (8) is a frame.

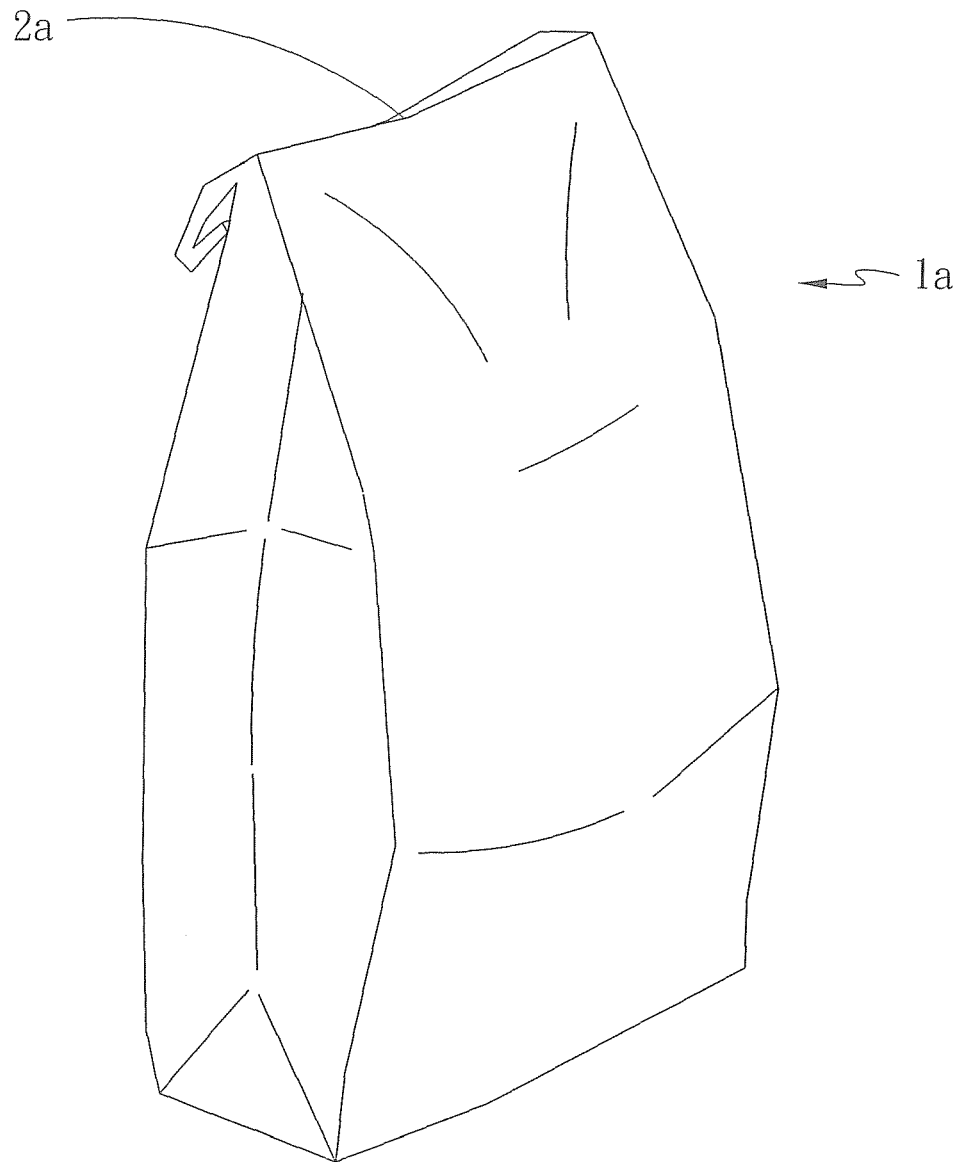


Fig. 1 PRIOR ART

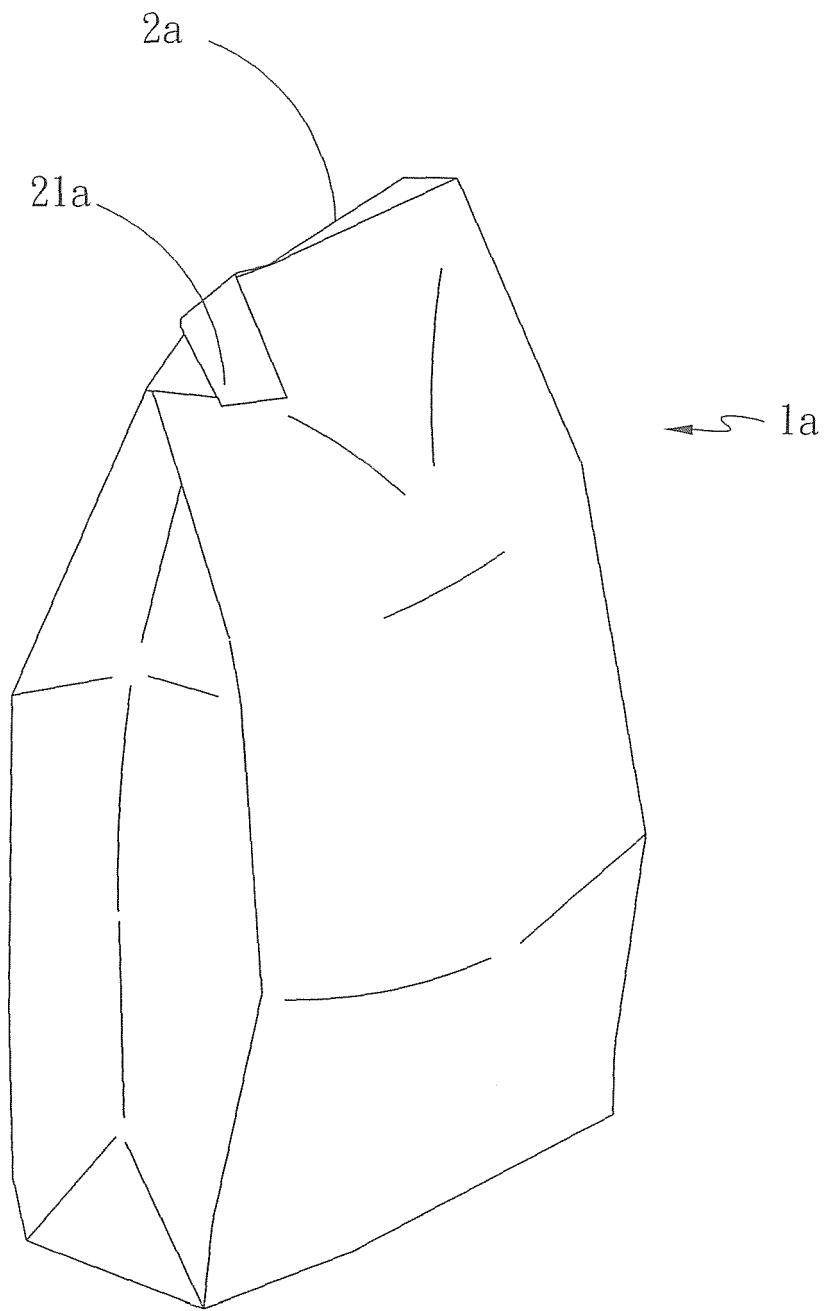


Fig. 2 PRIOR ART

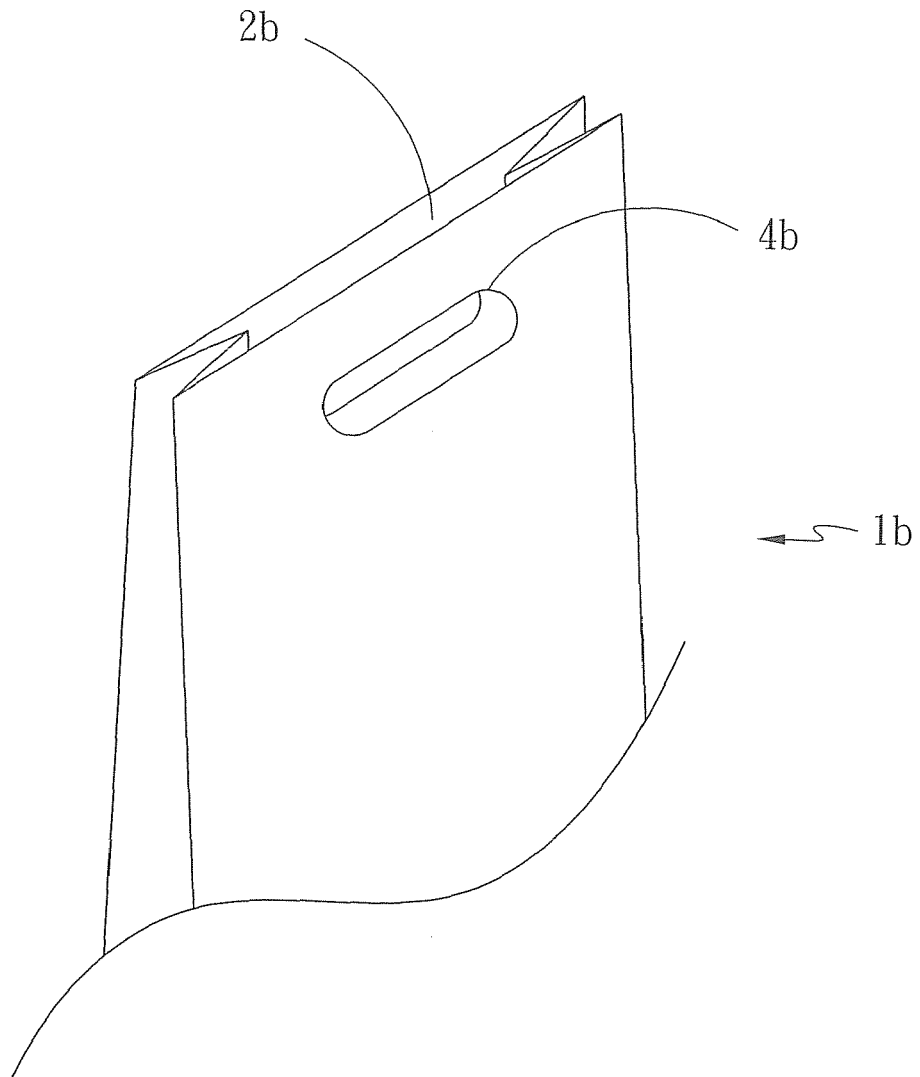


Fig. 3 PRIOR ART

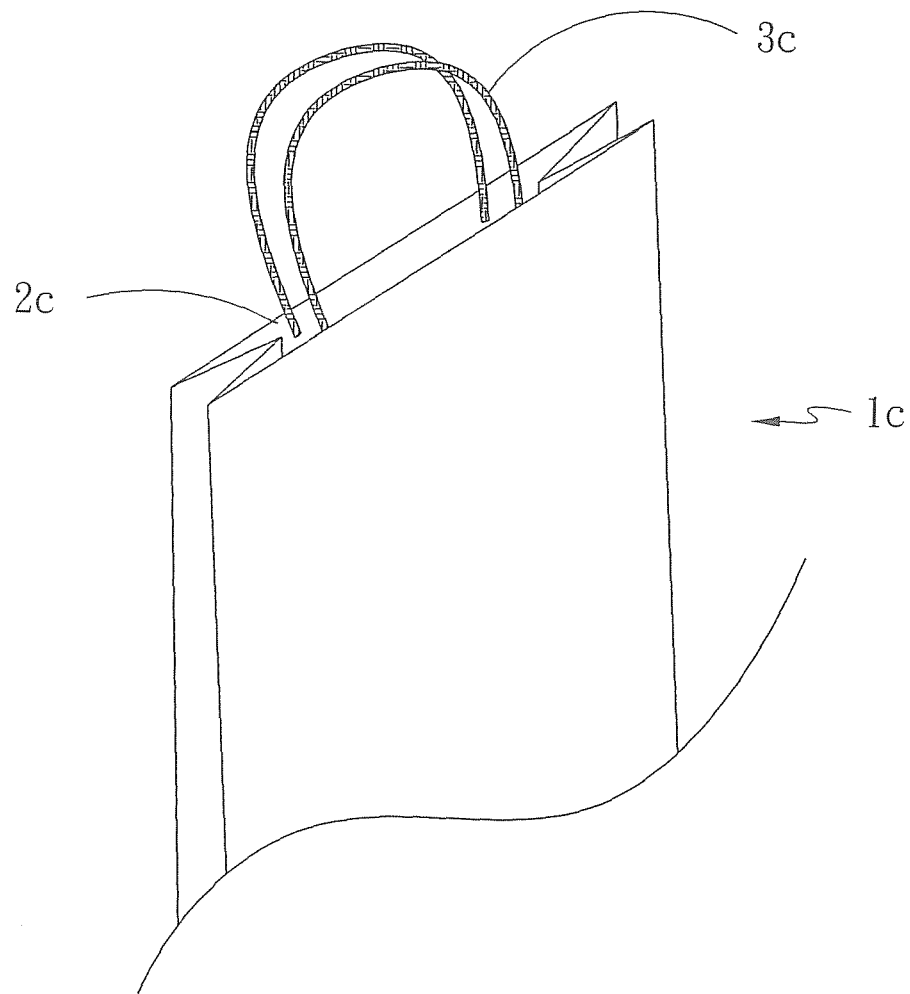


Fig. 4 PRIOR ART

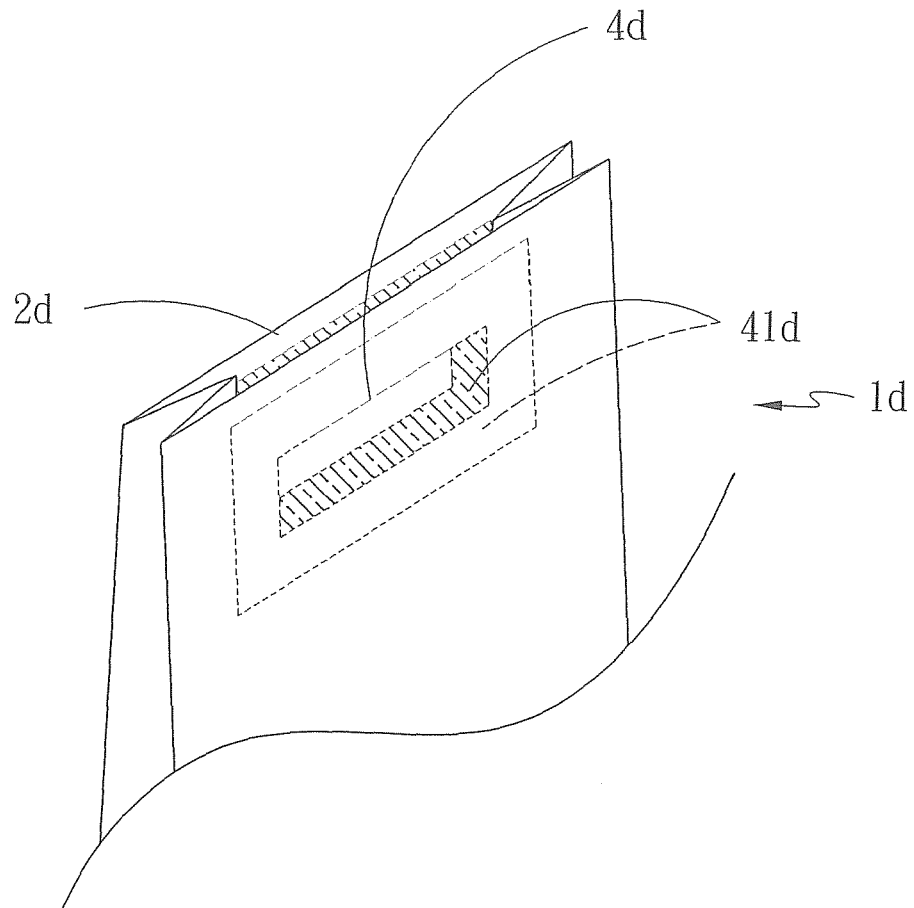


Fig. 5 PRIOR ART

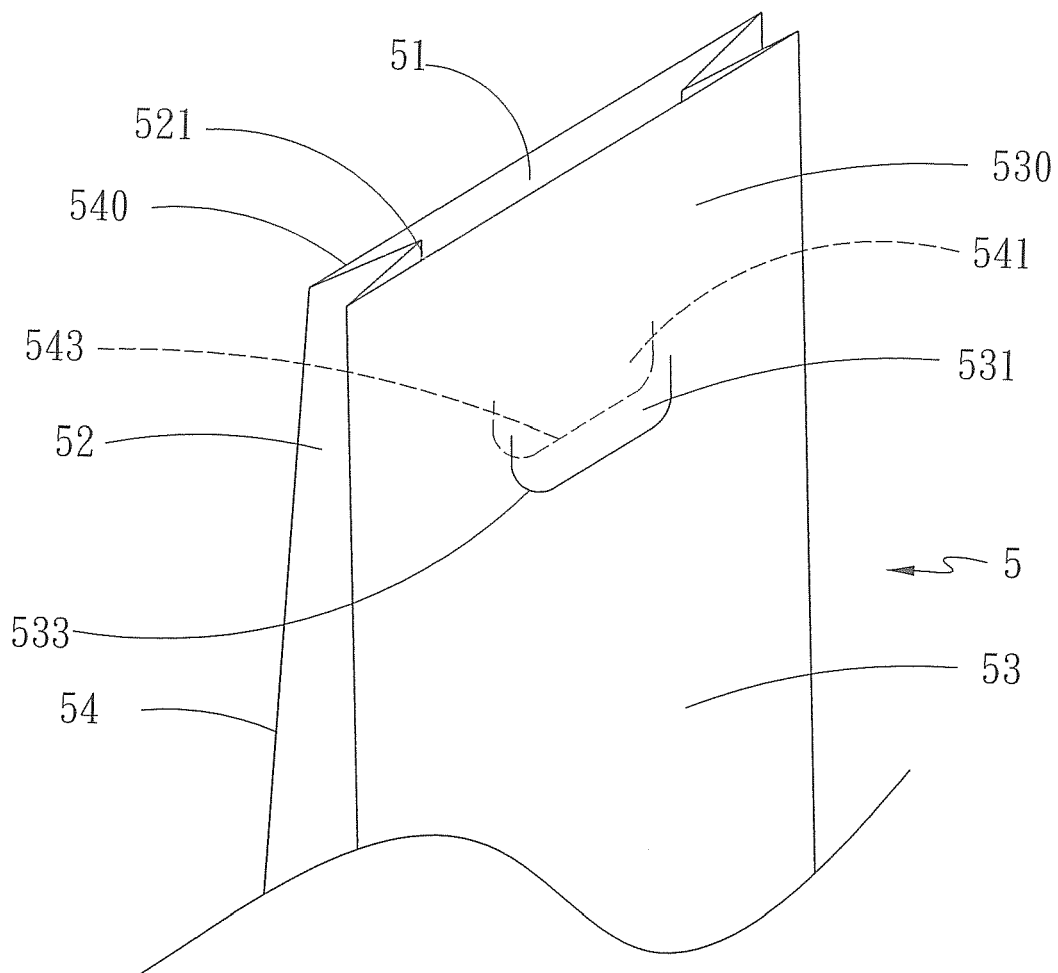


Fig. 6

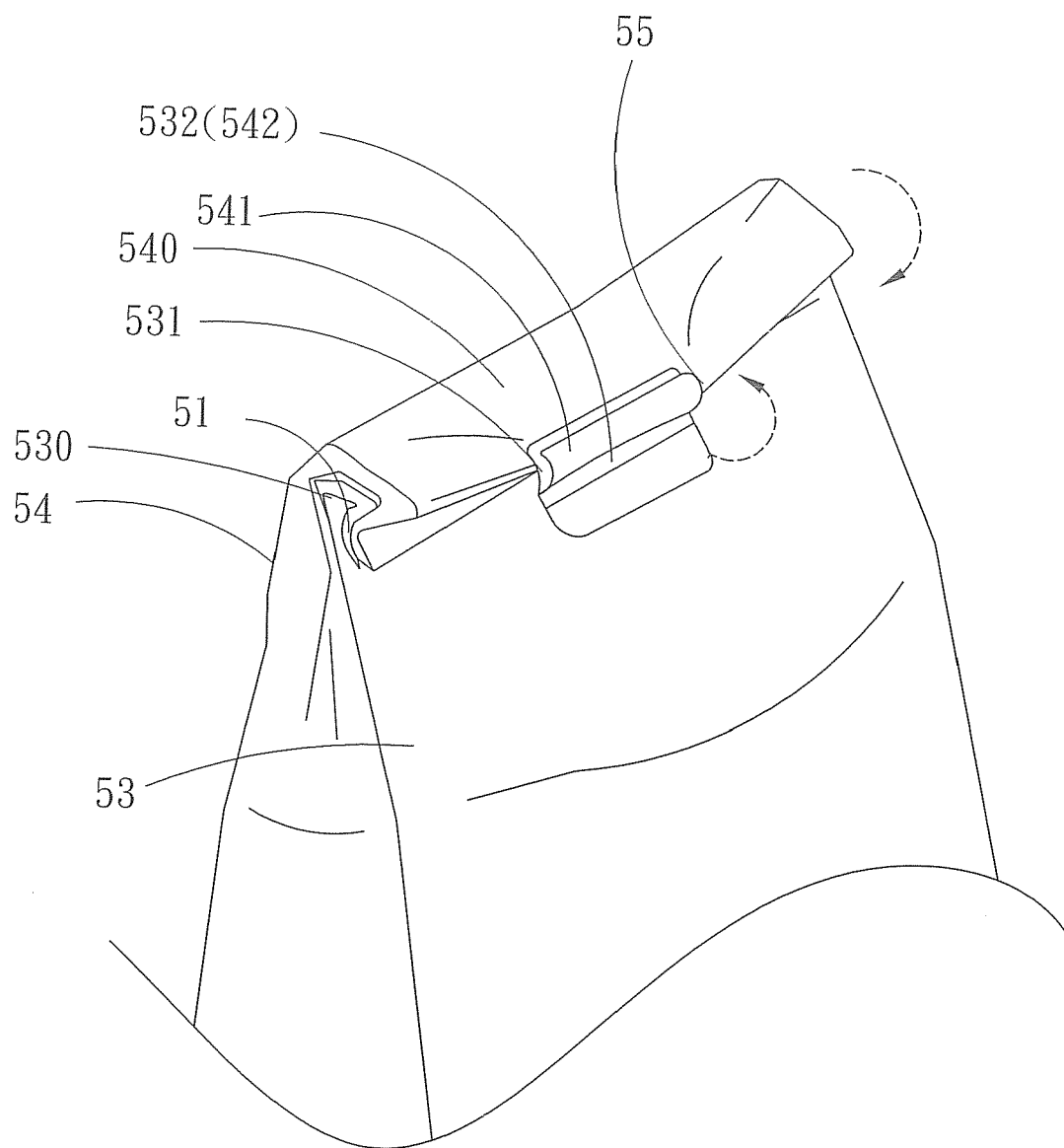


Fig. 7

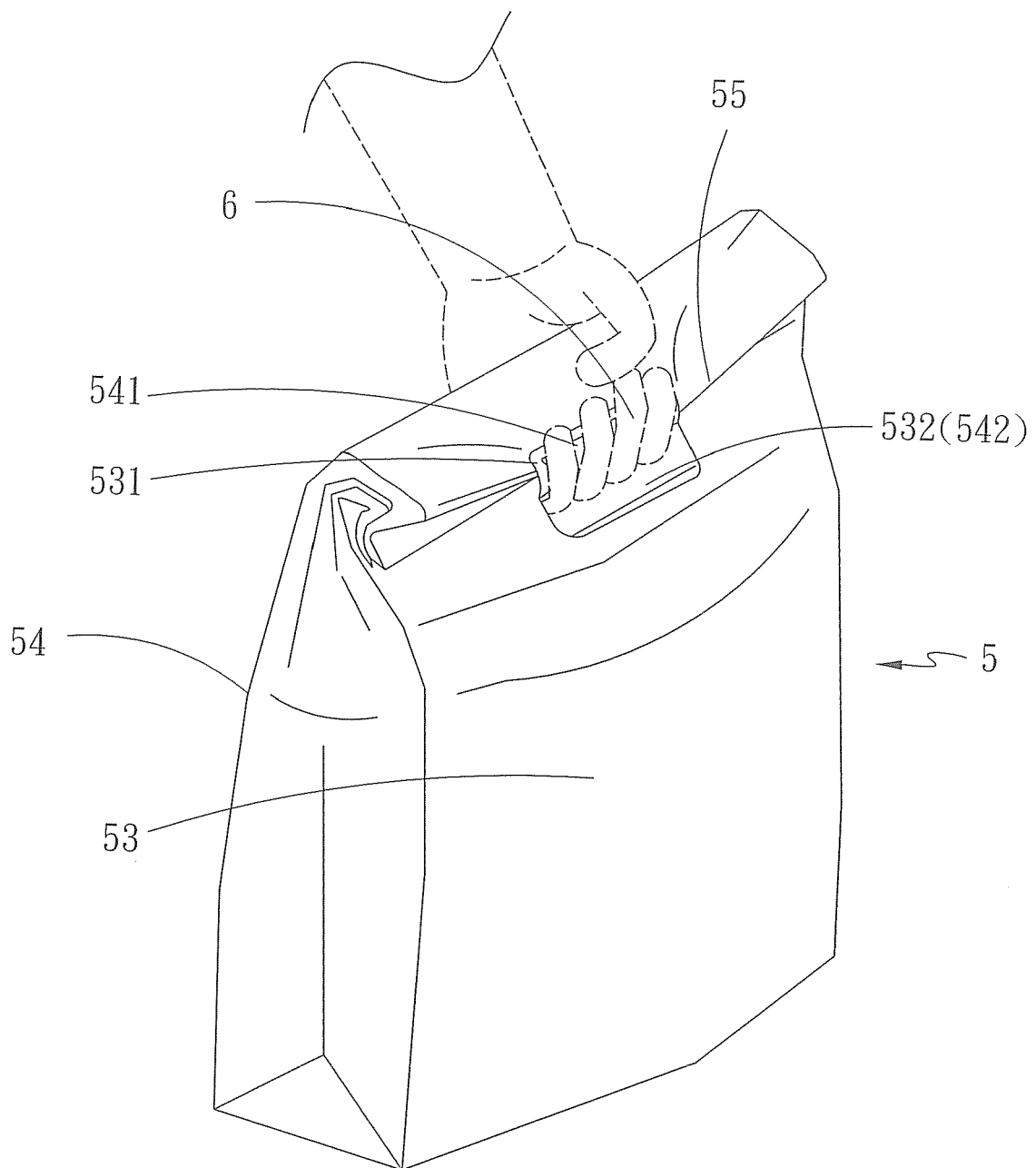


Fig. 8

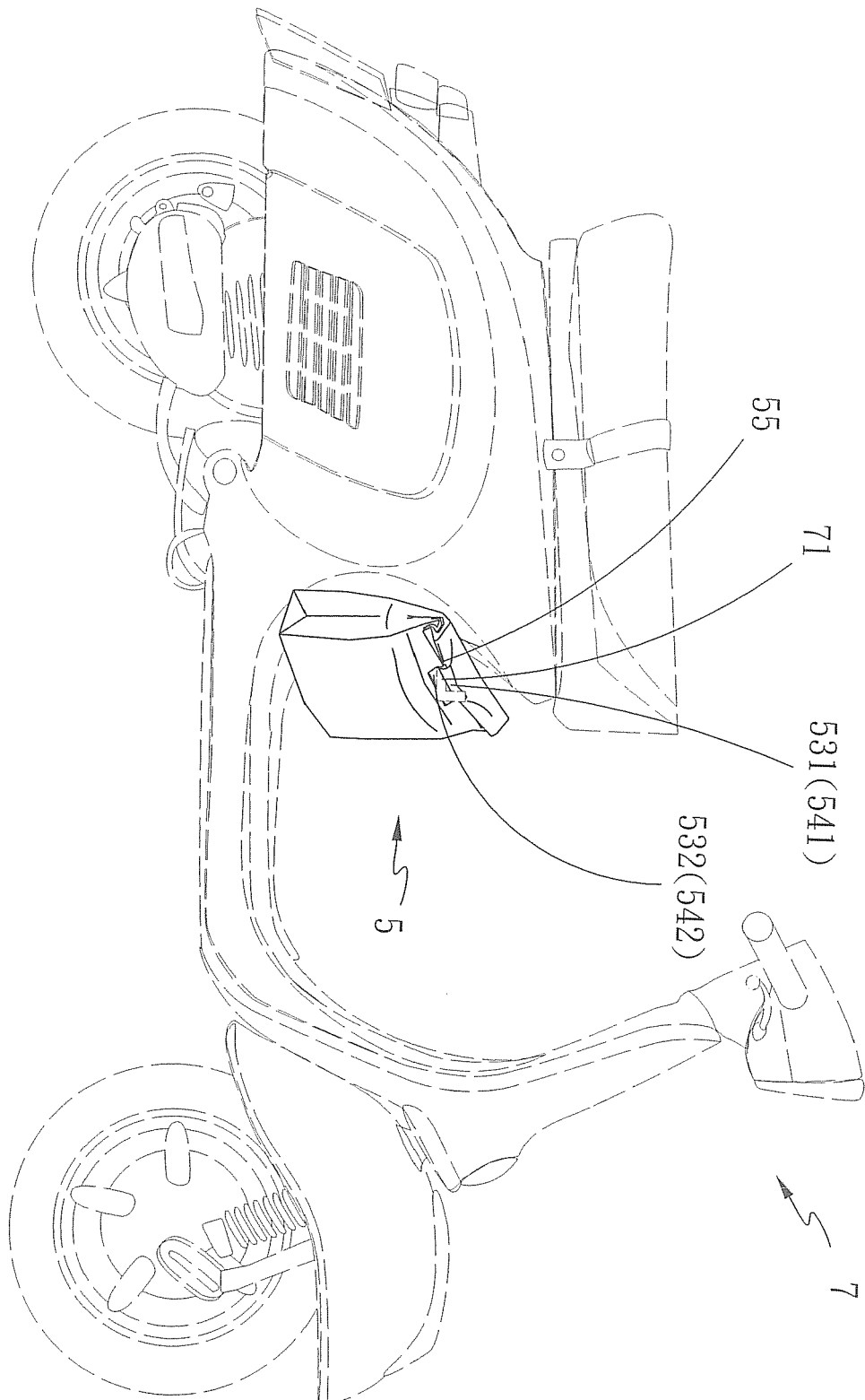


Fig. 9

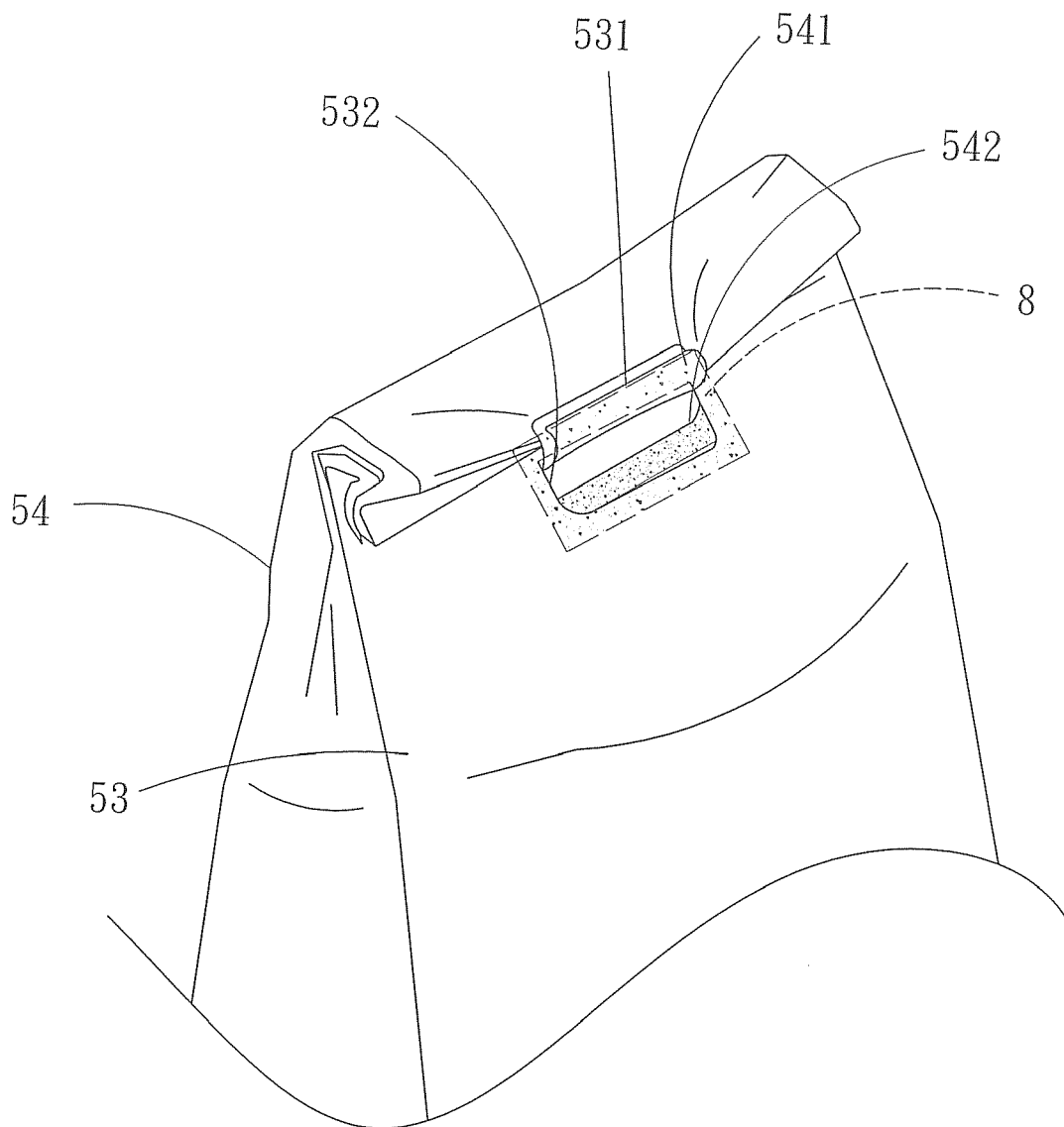


Fig. 10



EUROPEAN SEARCH REPORT

Application Number
EP 10 16 1174

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	DE 15 86 837 A1 (NIEDERMAYR PAPIERWARENFABRIK) 15 October 1970 (1970-10-15) * page 3 * * figures 1,5,6 * -----	1-6	INV. B65D33/24 B65D33/08
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			TECHNICAL FIELDS SEARCHED (IPC)
			B65D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 September 2010	Examiner Duc, Emmanuel
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 10 16 1174

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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03-09-2010

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