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(54) PLASTIC BAG DISPENSER AND MANUFACTURING METHOD THEREOF

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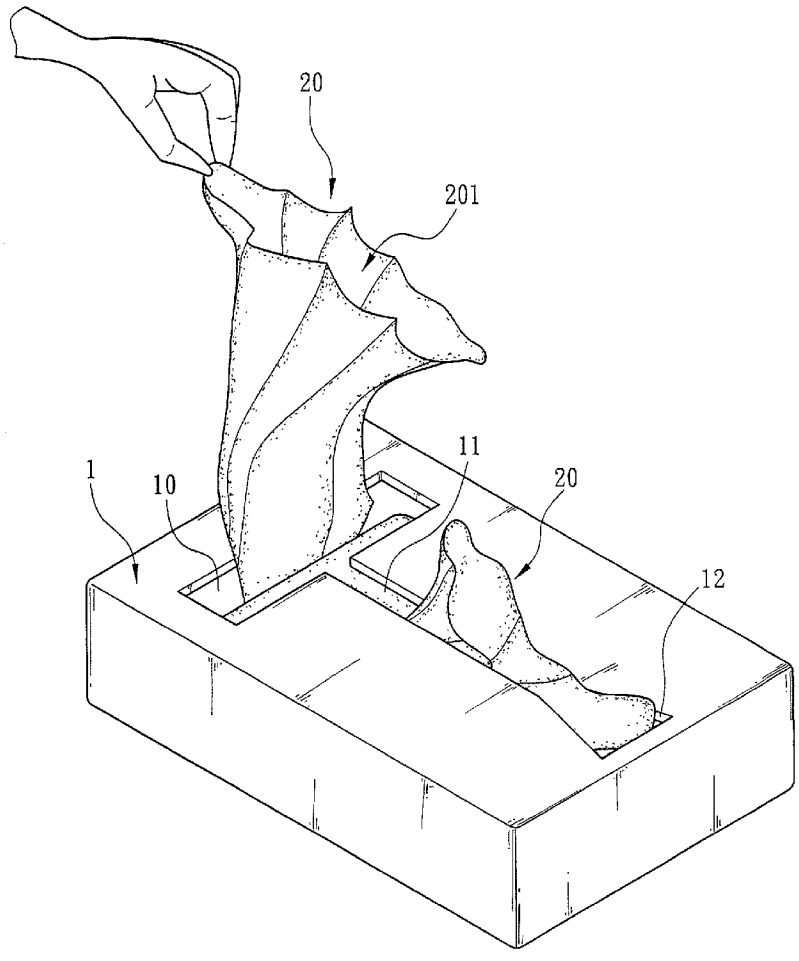
(57) ABSTRACT

The invention is to provide a plastic bag dispenser comprising a parallelepiped container having an opening assembly on top, and a stack of a plurality of plastic bags received in the container each including an opening at a front side, a closed end at a rear side, and an adhesive on top near the opening of each bag for sticking to a next below bag wherein the closed ends are bent downward toward the openings of the bags so as to form a bent section at underside of the stack. Thus, user can exert a small force to pull one bag from the container through the opening assembly without worrying of pulling two or more bags at one time.



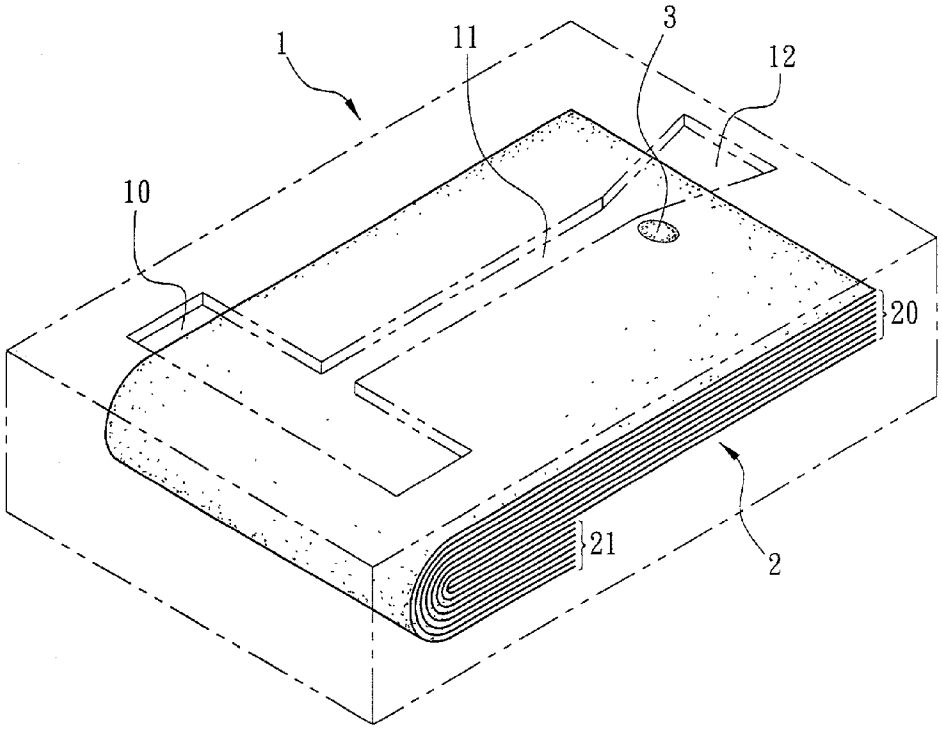


FIG. 1

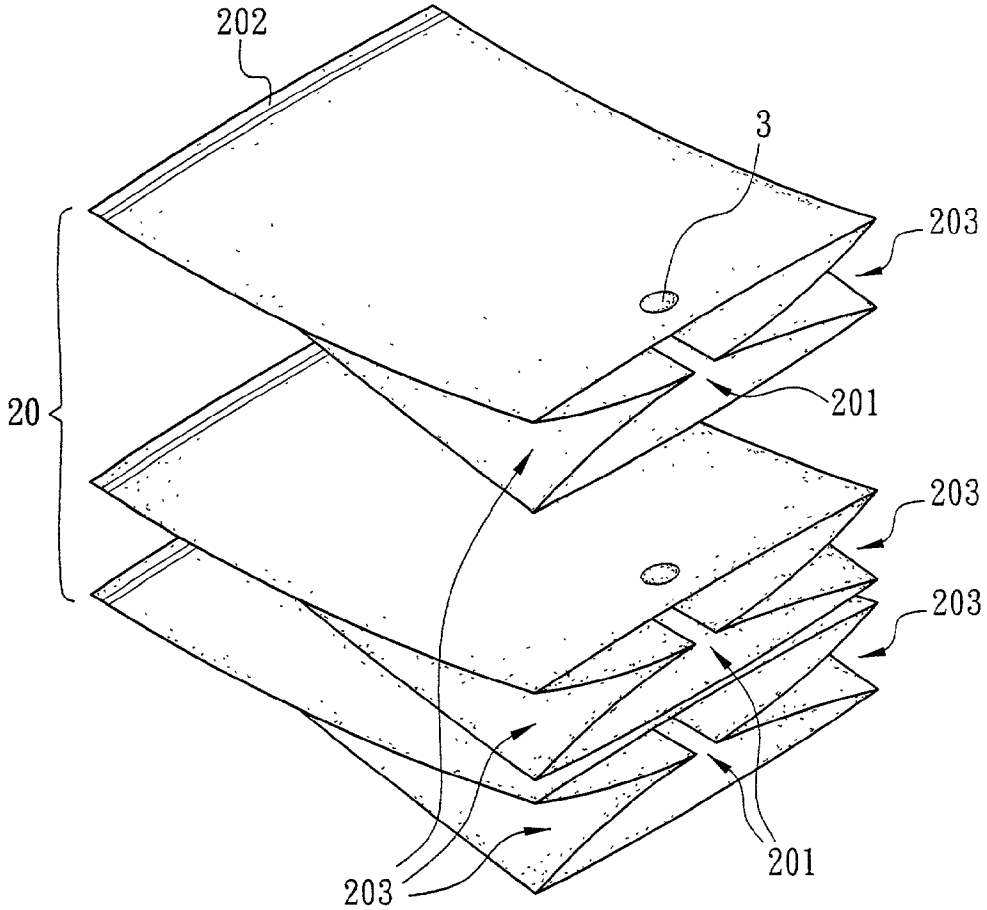


FIG. 2

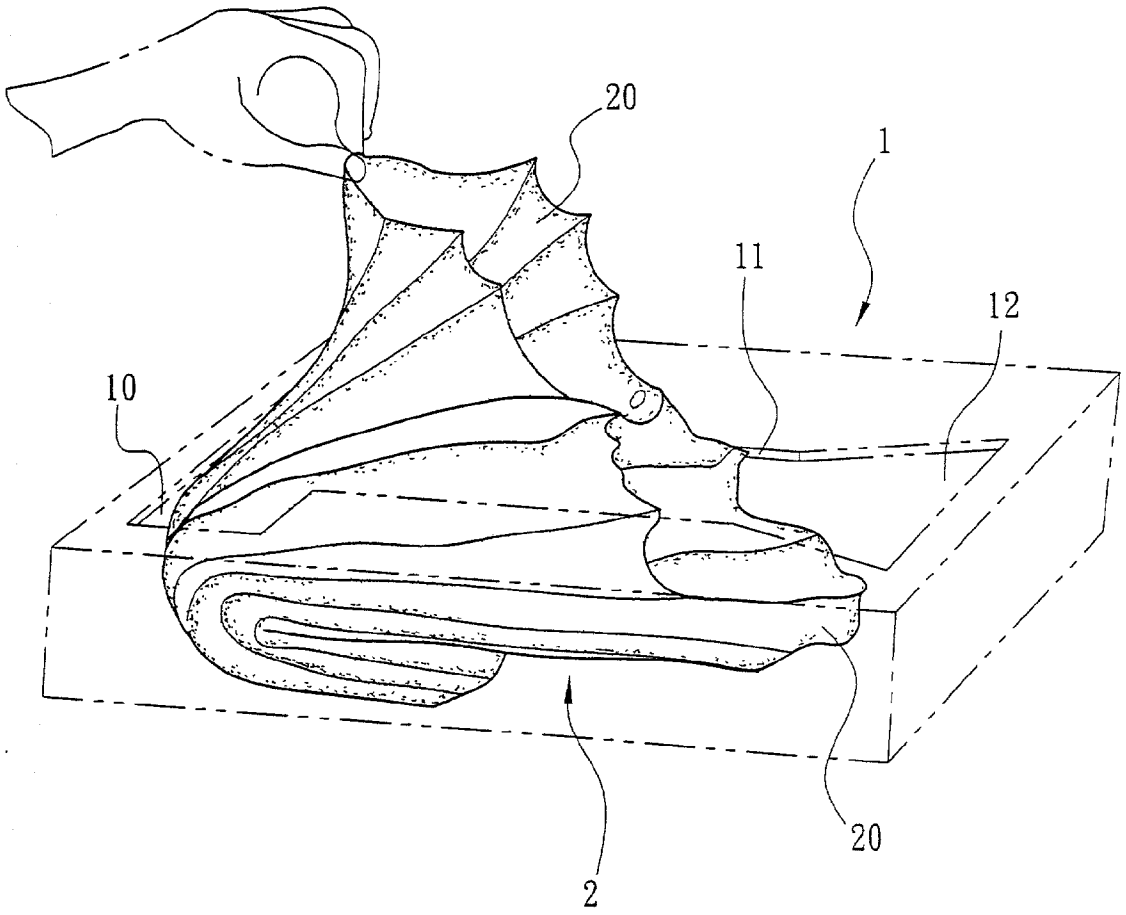


FIG. 3

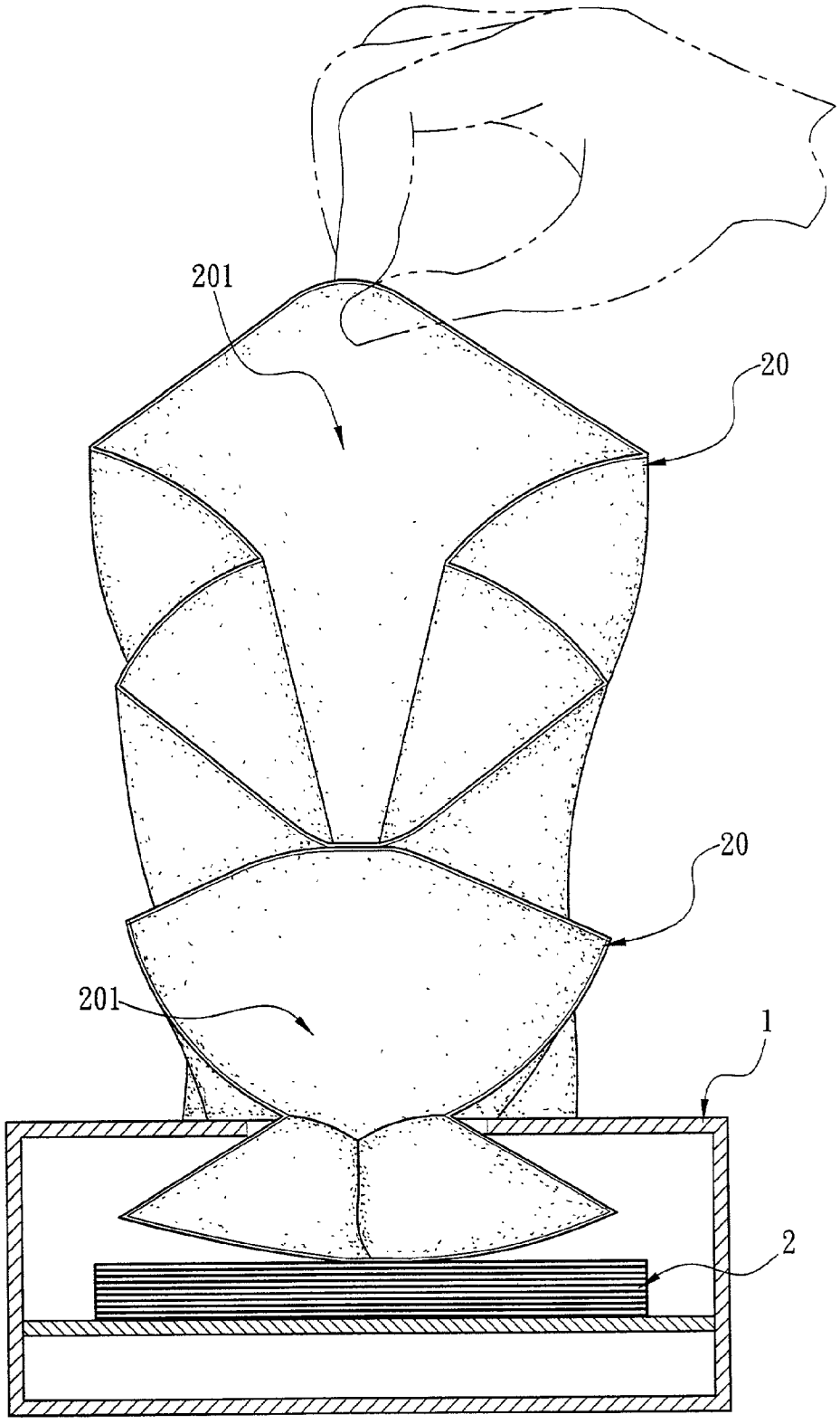


FIG. 4

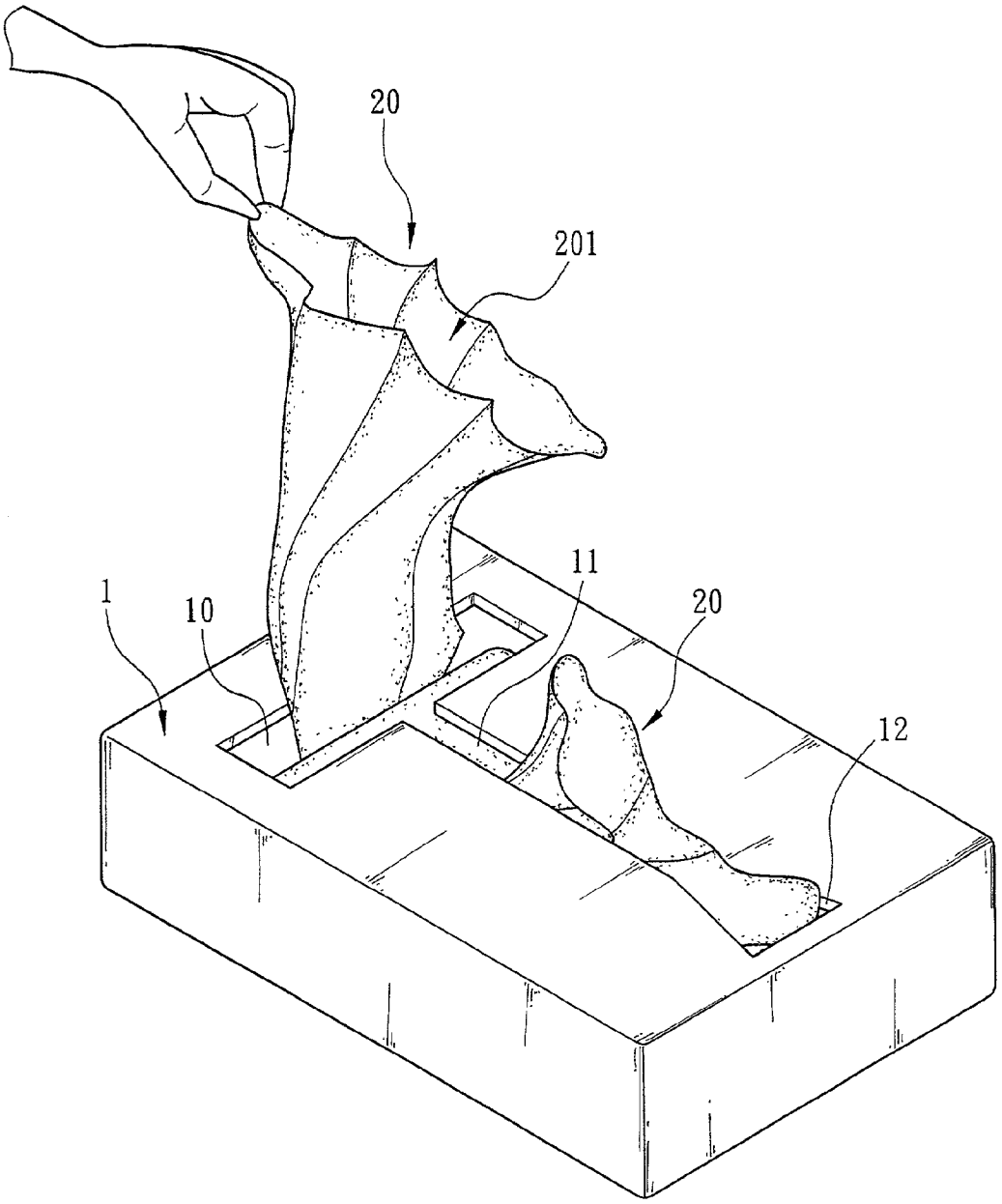


FIG. 5

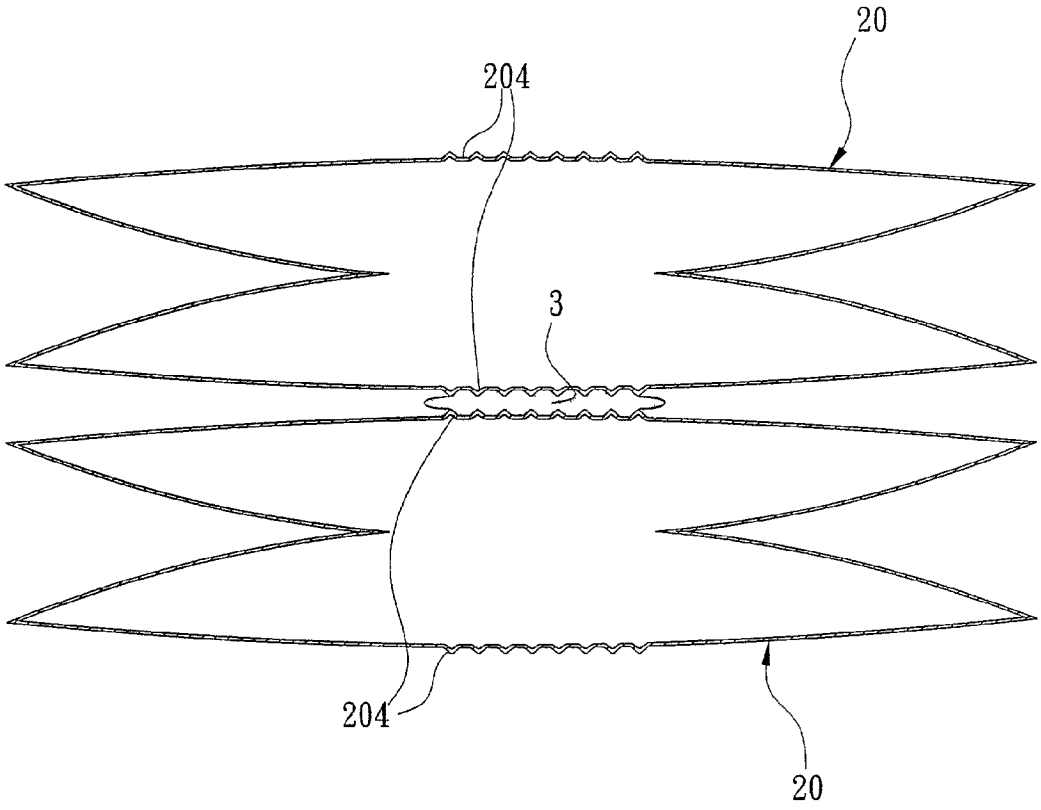


FIG. 6

PLASTIC BAG DISPENSER AND MANUFACTURING METHOD THEREOF

FIELD OF THE INVENTION

[0001] The present invention relates to plastic bags and more particularly to a plastic bag dispenser and manufacturing method thereof.

BACKGROUND OF THE INVENTION

[0002] Petrochemical industry has been well developed during these several decades. Various products including many used in daily life are made from plastic. It brings a great convenience to people. One type of plastic product is plastic bag for containing objects. Plastic bags have many different shapes and sizes in implementation. Also, not only quality and appearance but also convenience and ergonomic design are factors under consideration in choosing a desired plastic bag by consumers. As such, there is a need for plastic bag manufacturers to fulfil such needs of consumers in order to survive in the competitive market.

[0003] In one implementation, for example, plastic bags are hung in a roll by a vegetable stand in supermarket. People may pull the plastic bag roll for a desired length prior to tearing one or more plastic bags therefrom. In fact, however, it is often that people may tear several plastic bags in one tearing, i.e., the number of removed plastic bags larger than the desired one. Further, opening of plastic bag is not easy to open. It really bothers consumers. Furthermore, unopened plastic bags are useless, i.e., it is a waste. Thus improvement exists.

SUMMARY OF THE INVENTION

[0004] It is therefore an object of the present invention to provide a plastic bag dispenser comprising a parallelepiped container having an opening assembly on top, and a stack of a plurality of plastic bags received in the container each including an opening at a front side, a closed end at a rear side, two folded sections at both sides between the front and the rear sides wherein each folded section is folded symmetrically inward, and an adhesive on top near the opening of the bag for sticking to a next below bag wherein the closed ends are bent downward toward the openings of the bags so as to form a bent section at underside of the stack of plastic bags. In use, user can exert a small force to pull one bag from the container through the opening assembly without worrying of pulling two or more bags at one time since the adhesive force of adhesive is suitably small so that the adhesive force of adhesive only allows top halves of both folded sections and opening of the next below bag to be exposed on top of the container as folded sections of the next below bag being stopped in the opening assembly while one bag on the top being removed.

[0005] It is therefore an object of the present invention to provide a process of manufacturing a plastic bag dispenser, the process comprising the steps of (a) applying an adhesive on top of the bag near an opening thereof; (b) continuing step (a) until a predetermined plurality of bags have been processed; (c) stacking the bags with the openings thereof oriented the same for forming a stack of plastic bags; (d) bending closed ends of the bags downward toward the openings thereof so as to form a bent section at underside of the stack of plastic bags; and (e) placing the stack of plastic bags into a receiving space of a container through a top opening assembly of the container.

[0006] In one aspect of the present invention, the opening assembly comprises a widthwise opening near one side above the bent section, a central lengthwise opening extended from and perpendicular to the widthwise opening, and a flared opening extended from the lengthwise opening to the position above the openings of the bags. In use, user pulls a top bag up by holding the opening thereof. Thus, the bag is exposed above container as it has been drawn from the flared, the lengthwise, and the widthwise openings. After the adhesive on the bag is disengaged from a next below bag, the bag has been completely removed with the opening in an open state. At this time, top halves of both folded sections and opening of the next below bag are exposed on top of container as folded sections of the next below bag being stopped in the lengthwise opening while one bag on the top being removed. User does not need to worry about pulling two or more bags at one time since the adhesive force of adhesive is suitably small.

[0007] The above and other objects, features and advantages of the present invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] **FIG. 1** is a schematic perspective view of a stack of plastic bags placed in a paper container according to the invention;

[0009] **FIG. 2** is a perspective view of several plastic bags partly disengaged;

[0010] **FIG. 3** is a perspective view showing one bag on the top being removed from the paper container;

[0011] **FIG. 4** is side view in part section showing one bag on the top being removed from the paper container;

[0012] **FIG. 5** is a perspective view showing an almost removed plastic bag and a next plastic bag partly exposed on the paper container; and

[0013] **FIG. 6** is a cross-sectional view showing an adhesive adhered between two adjacent plastic bags.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0014] Referring to **FIGS. 1 and 2**, there is shown a plastic bag dispenser comprising a parallelepiped paper container **1** and a stack of plastic bags **2** within the container **1** in accordance with the invention. The stack of plastic bags **2** consists of a plurality of plastic bags **20**. Each bag **20** comprises an opening **201** at a front side, a closed end **202** at a rear side, two folded sections **203** at both sides between front and rear sides wherein each folded section **203** is folded symmetrically inward, and an adhesive **3** on top near opening **201** for sticking to a next below bag **20**. Closed ends **202** are bent downward about 180 degrees toward openings **201** so as to form a bent section **21** at underside of the stack of plastic bags **2**. On top of the container **1** there is provided an opening assembly comprising a widthwise opening **10** above bent section **21**, a lengthwise opening **11** extended therefrom and perpendicular to widthwise opening **10**, and a flared opening **12** extended from one end of lengthwise

opening **11** (i.e., distal from the joint of widthwise opening **10** and lengthwise opening **11**) to the position above openings **201** of the plastic bags.

[**0015**] Referring to FIGS. **3** to **5**, the removing of a bag **20** from container **1** will now be described. First pull a bag **20** up by holding the opening **201** thereof through the flared opening **12** of the container **1**. Thus, the bag **20** is exposed above container **1** as it has been drawn from flared opening **12**, lengthwise opening **11** and widthwise opening **10** until the bag **20** is completely removed from widthwise opening **10** (i.e., disengaged from a next below bag **20** which is adhered to the immediately above bag **20** by the adhesive **3**) with the opening **201** in an open state. At this time, top halves of both folded sections **203** and opening **201** of the next below bag **20** is exposed on top of container **1**.

[**0016**] Referring to **FIG. 6**, adhesive **3** is applied onto an area on top of a bag **20** so as to form a film after dried. The adhesive film is adhered to a next below bag **20**. Consumer can exert a small force to pull one bag **20** from container **1** through the opening assembly without worrying of pulling two or more bags **20** at one time since the adhesive force of adhesive **3** on such small area is suitably small. That is, the adhesive force of adhesive **3** only allows top halves of both folded sections **203** and opening **201** of the next below bag **20** to be exposed on top of container **1** as folded sections **203** of the next below bag **20** being stopped in lengthwise opening **11** while one bag on the top being removed.

[**0017**] Referring to **FIGS. 1, 2**, and **6** again, a manufacturing process of plastic bag dispenser according to the invention will now be described.

[**0018**] First, form a wrinkled area **204** on top of plastic bag **20** near opening **201** by performing a polarization treatment by means of a corona discharge device. Next, apply an amount about 2 mm^3 of adhesive **3** on wrinkled area **204**. Continue the above two steps until a predetermined plurality of bags **20** have been processed. Then stack the plurality of bags **20** with openings **201** of all bags **20** oriented the same direction for forming a stack of plastic bags **2**. Next, bend about one third portion of the stack **2** from closed ends of the plastic bags **2** downward about **180** degrees toward openings **201** thereof so as to form a bent section **21** at underside of the stack of plastic bags **2**. Then place the stack of plastic bags **2** into a receiving space of the container **1** which has an opening assembly on top comprising a widthwise opening **10** near one side above bent section **21**, a central lengthwise opening **11** extended from and perpendicular to widthwise opening **10**, and a flared opening **12** extended from one end of lengthwise opening **11** (i.e., distal from the joint of widthwise opening **10** and lengthwise opening **11**) above the openings **201** of the plastic bags **2**.

[**0019**] Moreover, a manufacturing process of plastic bags **20** comprises the following steps. First, pull a continuous tube like plastic film a predetermined length from a source (not shown) wherein the plastic film has both sides being inward folded symmetrically. Next, melt and seal a rear side of the pulled plastic film by a sealing device for forming a closed end **202**. Then cut the pulled plastic film from the source at the closed end **202** for forming a plastic bag **20**. The above three steps are repeated until a predetermined number of plastic bags **20** are manufactured. Each bag **20** comprises an opening **201** at a front side, a closed end **202** at a rear side, and two folded sections **203** at both sides between front and rear sides wherein each folded section **203** is folded symmetrically inward.

[**0020**] Referring to **FIGS. 2 and 6** again, a forming of adhesive **3** on bag **20** will now be described. First, form a wrinkled area **204** on top of plastic bag **20** near opening **201** by performing a polarization treatment by means of a corona discharge device. Next, apply a predetermined amount of adhesive **3** on wrinkled area **204** so as to form a film after dried. Continue above two steps until a predetermined plurality of bags **20** have been processed. Then stack the plurality of bags **20** with openings **201** of all bags **20** oriented the same and each bag **20** (except the last one) is adhered to a next below bag **20**, thereby forming a stack of plastic bags **2**. In use, consumer can exert a small force to pull one bag **20** from container **1** without worrying of pulling two or more bags **20** at one time since the adhesive force of adhesive **3** on wrinkled area **204** is suitably small. That is, the adhesive force of adhesive **3** only allows top halves of both folded sections **203** and opening **201** of the next below bag **20** to be exposed as folded sections **203** of the next below bag **20** being stopped in lengthwise opening **11** while one bag **20** on the top being removed from the paper container.

[**0021**] While the invention has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.

What is claimed is:

1. A plastic bag dispenser comprises:

a container having an opening assembly on top,

a stack of plastic bags placed within the container, which comprises a plurality of plastic bags each including an opening at a front side, a closed end at a rear side, two folded sections at both sides between the front and the rear sides wherein each folded section is folded symmetrically inward, and an adhesive on top near the opening of the bag for sticking to a next below bag wherein the closed ends are bent downward toward the openings of the bags so as to form a bent section at underside of the stack.

2. The plastic bag dispenser of claim 1, wherein the opening assembly comprises a widthwise opening near one side above the bent section, a central lengthwise opening extended from and perpendicular to the widthwise opening, and a flared opening extended from the widthwise opening to the position above the openings of the bags.

3. The plastic bag dispenser of claim 1, wherein the bag further comprises a wrinkled area on top near the opening thereof with the adhesive applied on the wrinkled area for adhering two adjacent bags together.

4. A process of manufacturing a plastic bag dispenser, the process comprising the steps of:

(a) applying an adhesive on top of the bag near an opening thereof;

(b) continuing step (a) until a predetermined plurality of bags have been processed;

(c) stacking the bags with the openings thereof oriented the same direction for forming a stack of plastic bags;

(d) bending closed ends of the bags downward toward the openings thereof so as to form a bent section at underside of the stack of plastic bags; and

(e) placing the stack of plastic bags into a receiving space of a container through a top opening assembly of the container.

5. The process of claim 4, wherein the opening assembly comprises a widthwise opening near one side, a central lengthwise opening extended from and perpendicular to the widthwise opening, and a flared opening extended from the lengthwise opening so that after step (e) has been performed the widthwise opening is above the bent section and flared opening is above the openings of the bags.

6. The process of claim 4, wherein before step (a) is performed further comprising steps of forming a wrinkled area on top of the bag near the opening thereof by performing a polarization treatment by means of a corona discharge device; and applying the adhesive on the wrinkled area.

7. The process of claim 4, wherein after step (b) has been performed further comprising the step of bending about one third portion of the plastic bag dispenser from the closed ends of the bags downward about 180 degrees toward the openings of the bags so as to form a bent section at underside of the stack of plastic bags.

8. The process of claim 4, wherein an amount of the applied adhesive is about 2 mm^3.

9. The process of claim 4, wherein a manufacturing process of the plastic bag comprising the steps of:

(1) pulling a continuous tube like plastic film a predetermined length from a source wherein the plastic film has both sides being inward folded symmetrically;

(2) melting and sealing a rear side of the pulled plastic film by a sealing device for forming a sealed end; and

(3) cutting the pulled plastic film from the source at the sealed end for forming a plastic bag wherein the bag comprises an opening at a front side, a closed end on the sealed end, and two inward folded sections at both sides between the front and the rear sides.

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