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(54) SELECTIVELY EMBOSSED TUCK AND LOCK BAG

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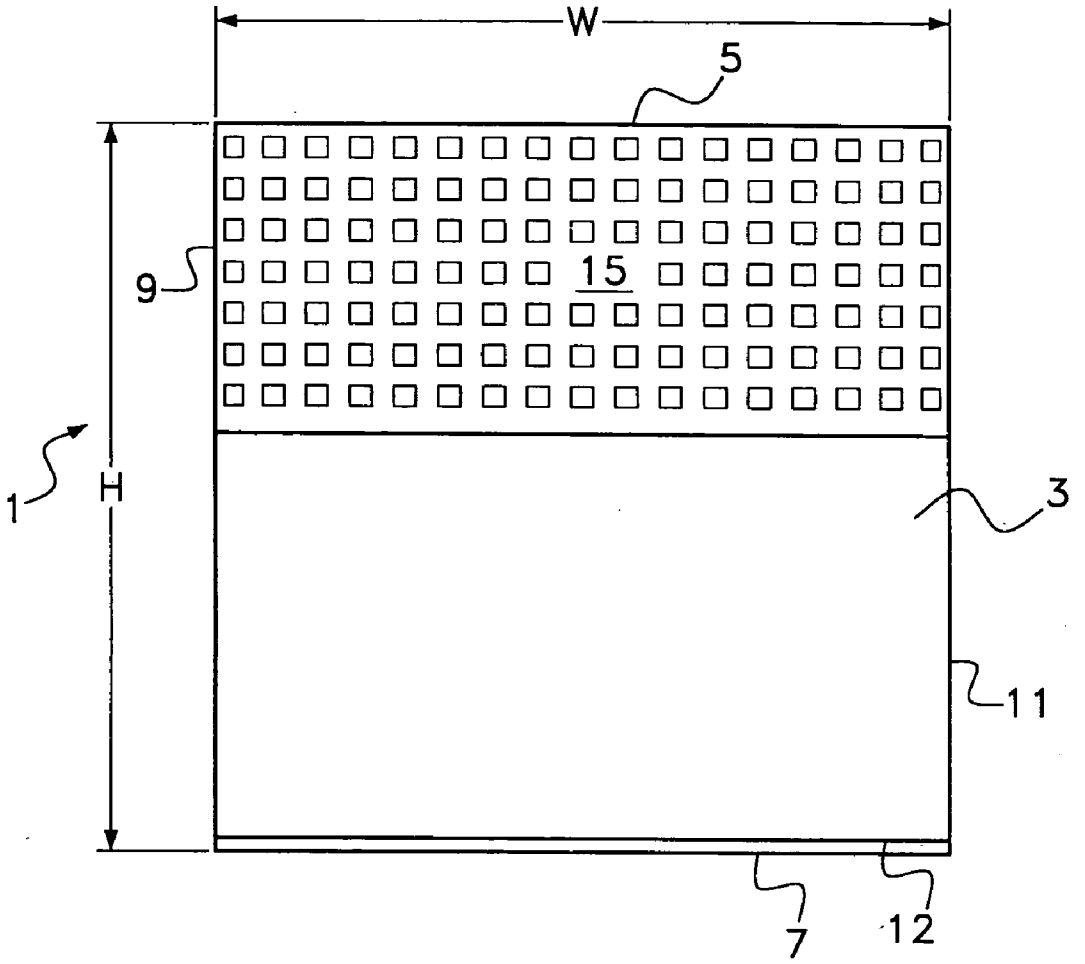
(57) **ABSTRACT**

A selectively embossed plastic film bag includes: (a) a front panel and a back panel, formed of a flexible plastic film, and each having a top, a bottom, a left side and a right side, the front panel having a predetermined width W at it's top and having a predetermined height H, the back panel and the front panel being connected to one another at the sides and the bottom and being open at the top to establish the bag; (b) an embossment located on only the front panel, the embossment having a width of about 30% to 100% of the width W, and the embossment having a height of about 2% to about 100% of the height, H. The selectively embossed plastic film bag embossment may be within a topmost 20% of the front panel with height equal to about 2% to about 20% of the height H.



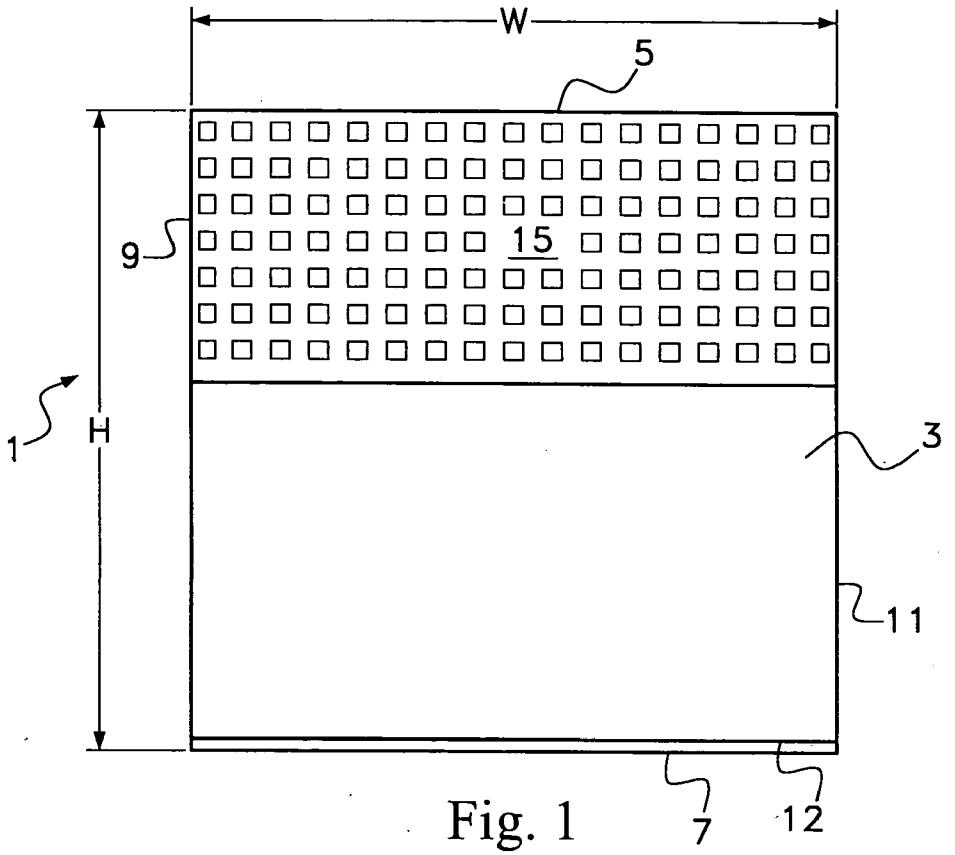


Fig. 1

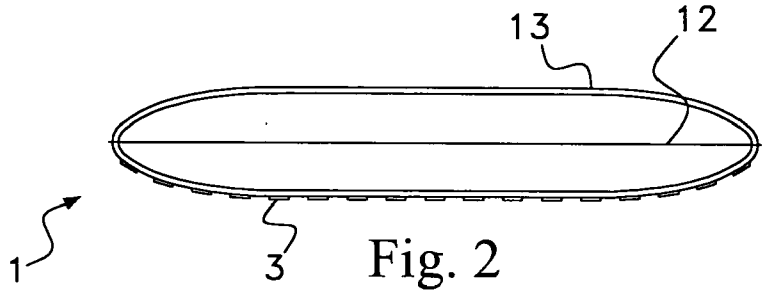


Fig. 2

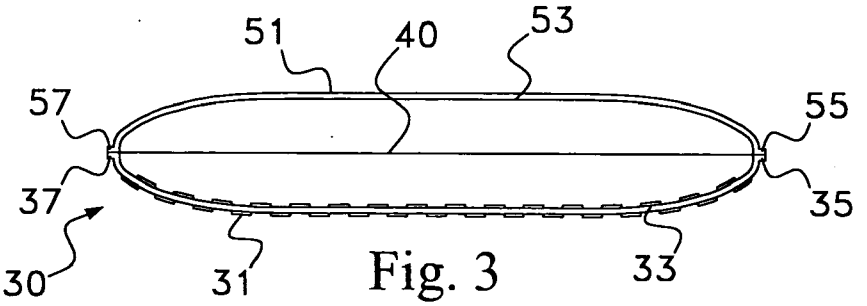


Fig. 3

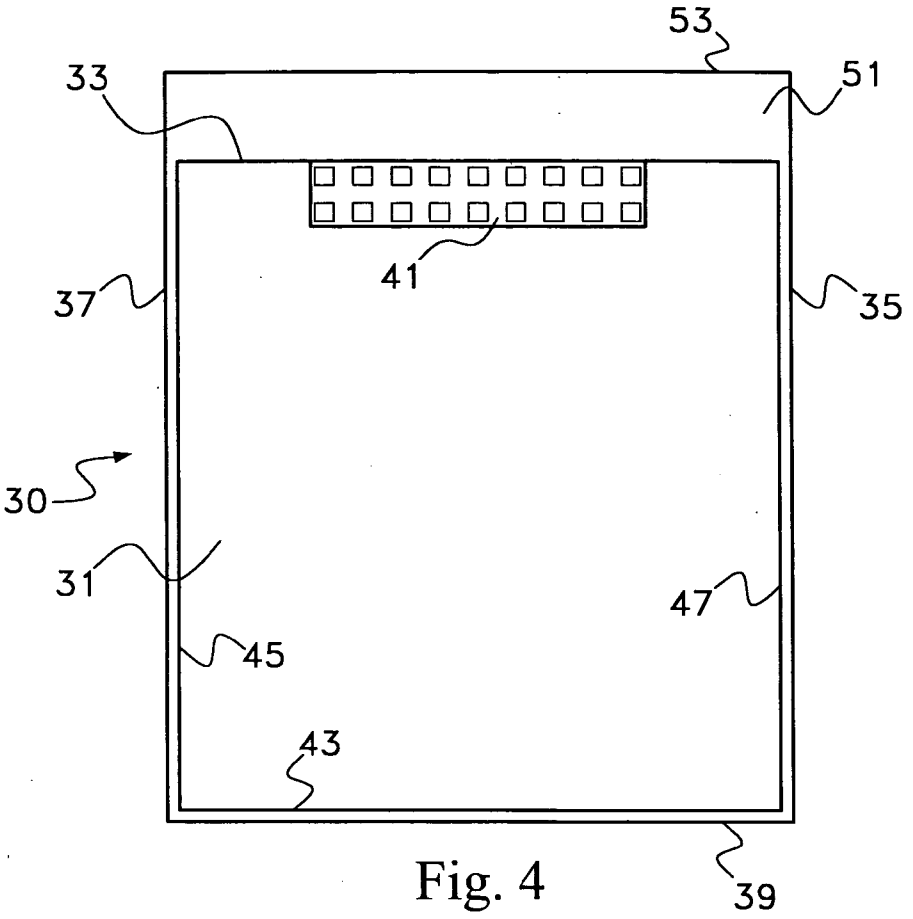


Fig. 4

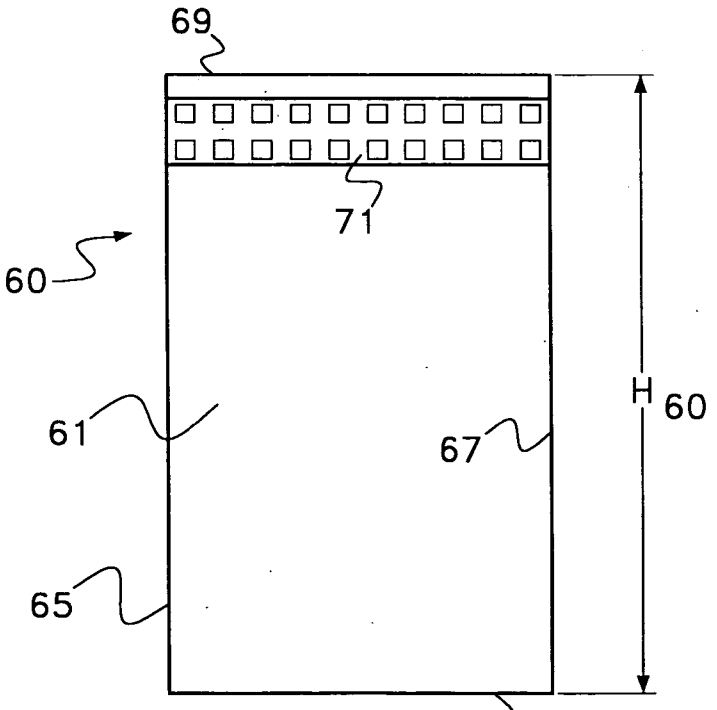


Fig. 5

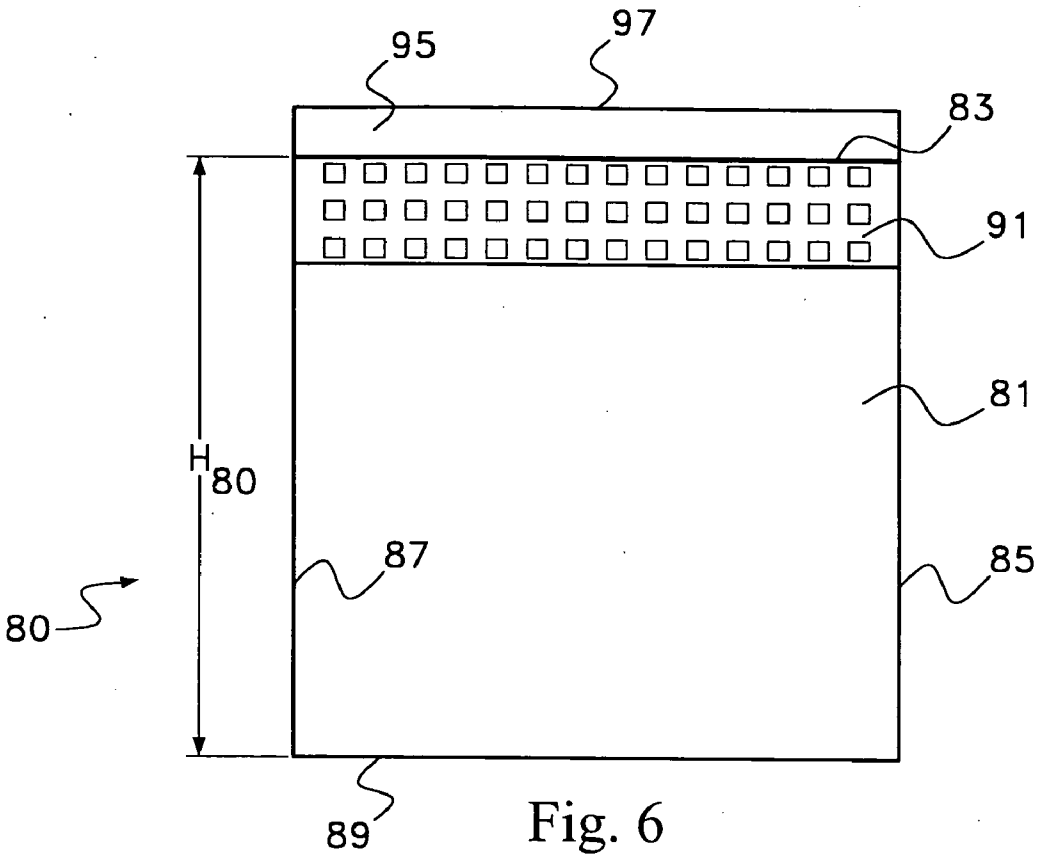

95
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Fig. 6

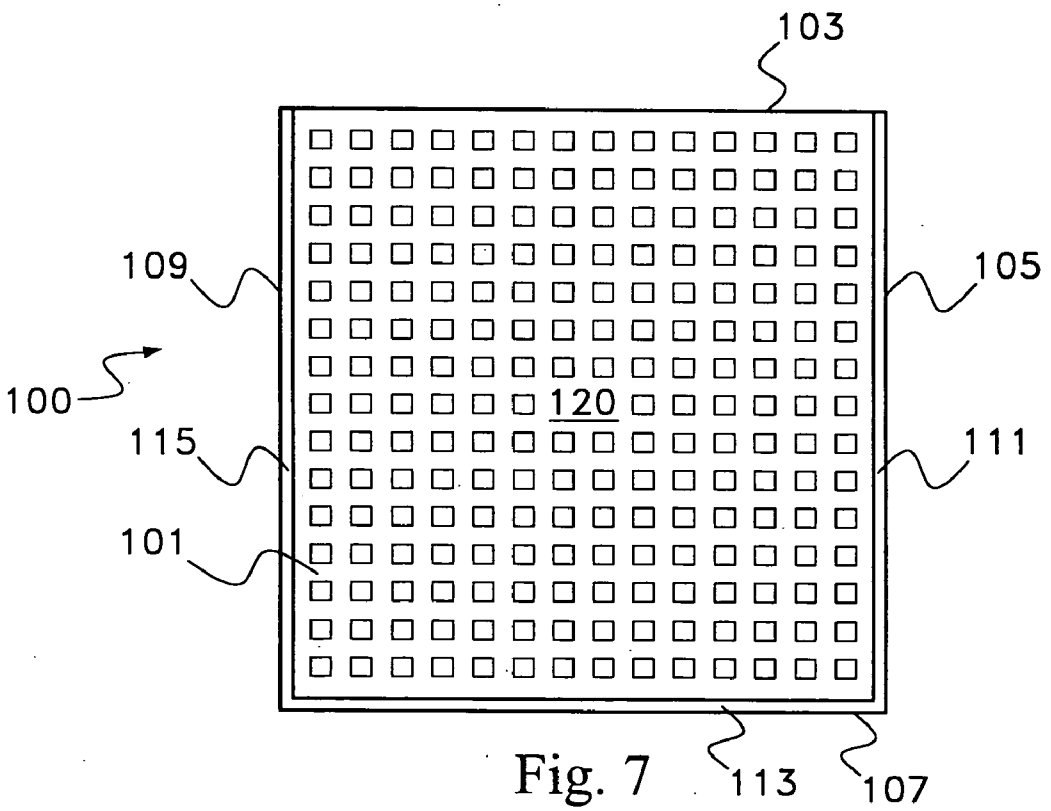
103
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Fig. 7

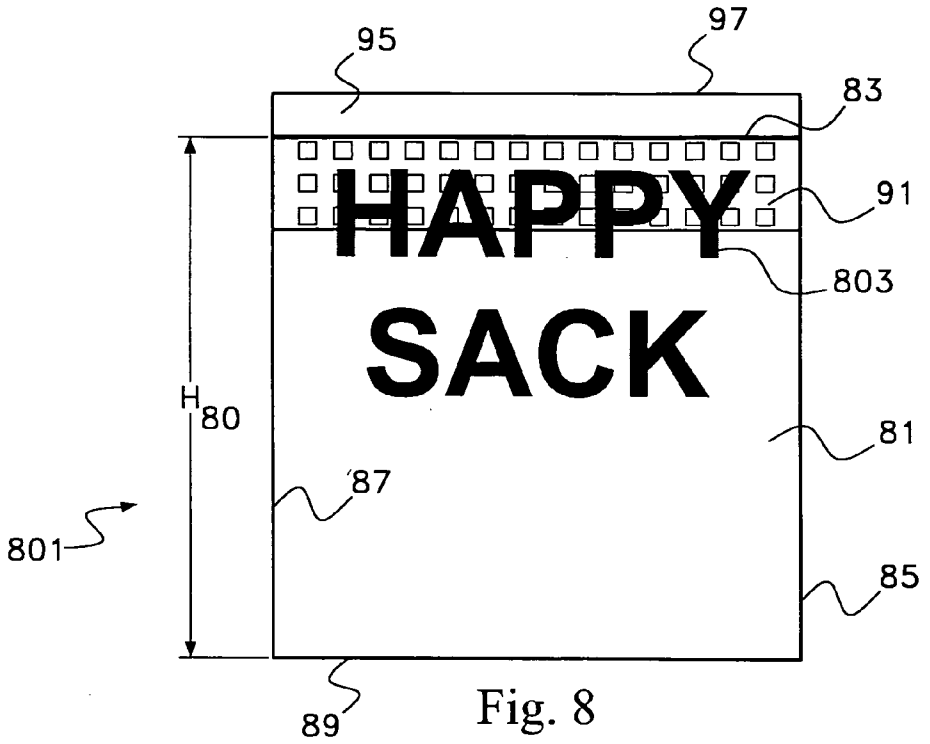
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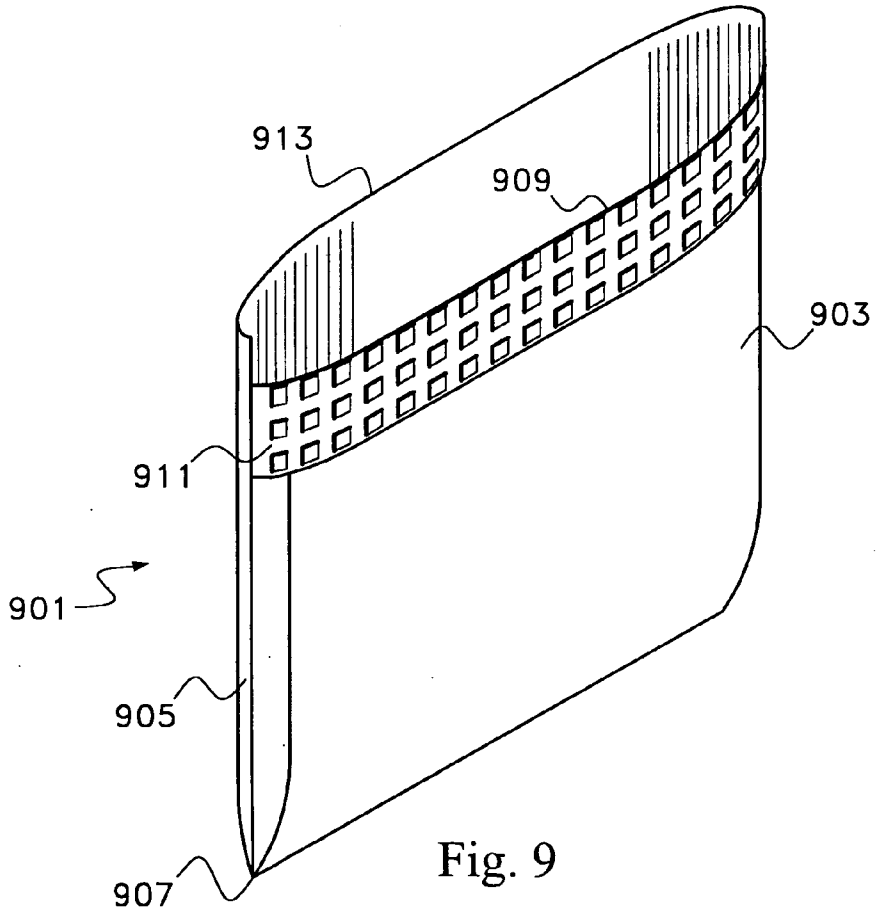
Fig. 8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901
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Fig. 9

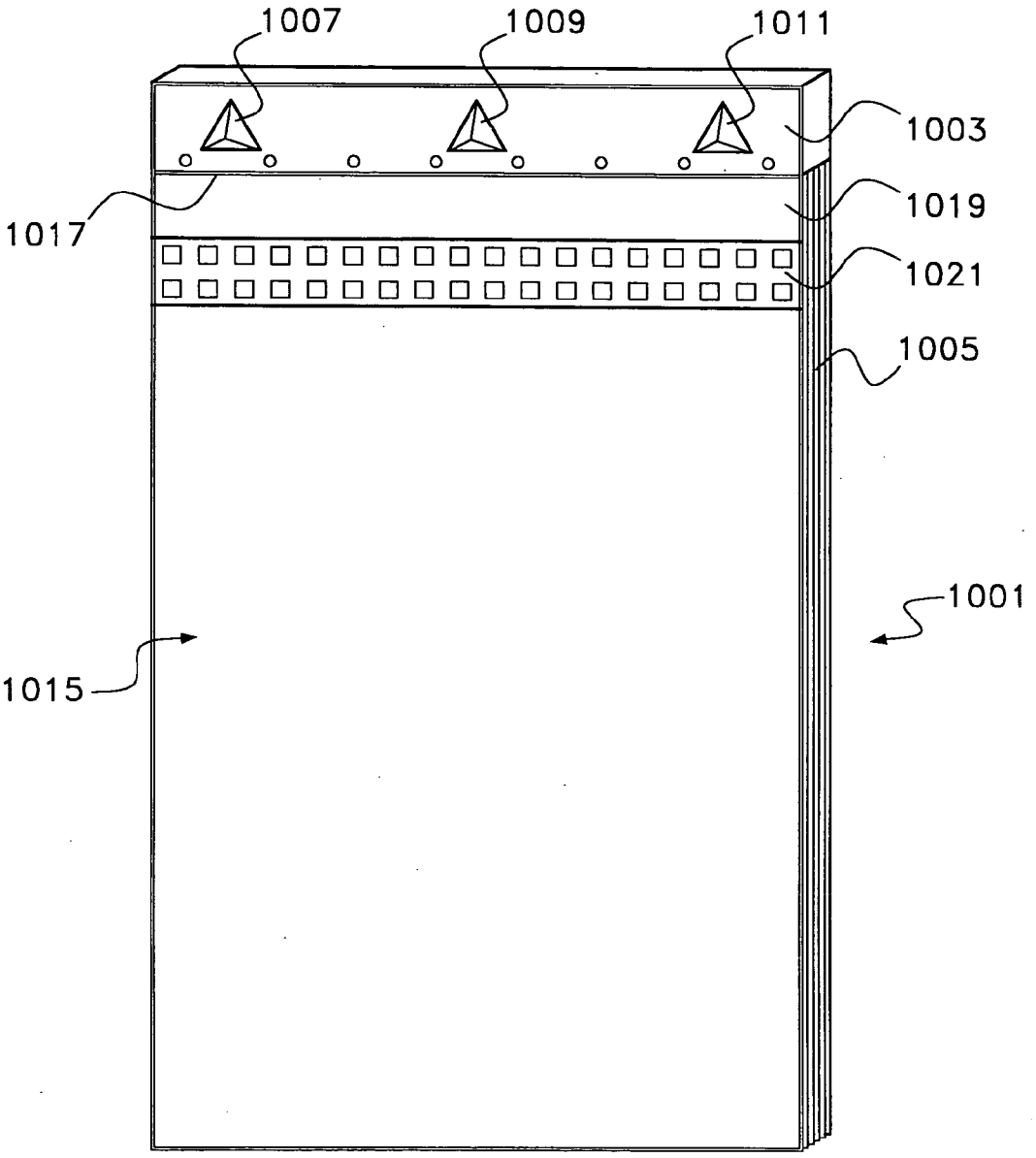

Fig. 10

SELECTIVELY EMBOSSED TUCK AND LOCK BAG

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to plastic bags typically used in supermarkets and other retail stores, especially in produce and similar departments. Such bags are made of thin plastic and they often stick when being opened for the first time. The present invention bags are selectively embossed on the front only, to render them easier to slide the front panels and the back panels from one another to initially open them. Although the embossment may cover the entire front panels, in preffered embodiments, the embossment is less than the full height of the front panels, and is positioned toward or at the top.

[0003] 2. Information Disclosure Statement

[0004] The following prior art is representative of the state of the art in the field of plastic film bags:

[0005] Stacked plastic bags, and/or roll mounted produce bags are commonly found in modern grocery stores and supermarkets. These bags are designed for customers to use when purchasing fresh produce or other products. In some instances the actual purchasing customers open the bags, while in other instances, a store clerk or other person may do so. The bags currently available are difficult for customers to use for several reasons. First, the bags that are stacked together tend to cling together and are difficult to open. Second, it is difficult to tell the open end of the bag from the closed end of the bag. Roll-mounted produce bags that identify the proper end to open, is partially opened by dispensing rack and eliminates the problem of sticking. However, stacked bags take less space and do not require the investment, location and even installation of roll dispensers.

[0006] Various designs have been developed for dispensers for roll mounted bags, incorporating a number of different technologies.

[0007] U.S. Pat. No. 4,179,055 issued to Milner, discloses a device for separating a continuous strip of plastic bags mounted on a roll separated by scores lines. The bags pass between a plate and a pressure bar. A prong projects outwardly from the center portion of the plate to facilitate separation of the bags along the score lines and to display the next bag for easy grasping by an operator.

[0008] U.S. Pat. No. 4,714,191 issued to Richardson, describes a one piece paperboard carton blank folded into a rectangular shape for packaging and dispensing from a roll of individual plastic bags, particularly disposable milk bags for feeding babies. The individual bags are connected by perforations. The carton includes a tab protruding in the direction opposite to the direction of withdrawal of bags from the roll. When the center of the perforated edge of the bag is impaled on the tab, further withdrawal of a succeeding bag is restrained and the first bag is readily separated to facilitate its dispensing while locating the leading edge of the succeeding bag where it may be easily reached for withdrawal.

[0009] U.S. Pat. No. 5,558,262 issued to Simhaee, discloses a plastic bag dispenser that holds a continuous roll of bags connected by perforated separation lines. The dispenser is provided with a tongue, which the bags are dispensed over, that engages the separation line between the bag at the end of the roll and the next bag. The roll of bags rests in curved grooves in the dispenser that cause the roll to abut and frictionally engage an interior surface of the dispenser, preventing freewheeling of the roll.

[0010] U.S. Pat. No. 5,556,019 issued to Morris, describes a bag separator and dispenser for use with bags wound on a core and separated by perforation lines at each end of the bags. The perforation lines include a slot that is collinear with the perforations and is used to engage a separator projection. The projection enters the slot as the bags are pulled from the roll. The dispenser includes two braking devices to control the removal of bags from the roll, a braking bar underneath the roll of bags and a pair of fingers that are attached to the channel for the core and are designed to engage the care as the number of bags on the roll decreases.

[0011] U.S. Pat. No. 5,934,535 issued to Kannankeril, discloses a roll of bags having a core with an indexing member on at least one end. The dispenser comprises a wire frame formed into channels to support the core. The dispenser includes at least one brake attached to a support member and disposed at an angle to the support member to provide tension to the edges of the roll of bags as the core passes through the channel passageway as the bags are removed from the roll. Spaced apart from the support is a separating tongue. The tongue engages the slot regardless of whether the bags are drawn over or under the tongue.

[0012] U.S. Pat. No. 6,481,594 issued to Yeh et al describes a roll mounted T-shirt bag and dispensers for same. The bag is designed for fresh produce and includes front and rear panels, first and second side gussets, a bottom seam, a top seam and a U-shaped cutout forming an openable bag mouth and a pair of carrying handles. The bags are joined above and below the upper and lower seams at first and second perforation lines. The bags are wound onto a cylindrical core to form a compact roll. In a variant of the invention, the bags are folded inwardly from the side edges prior to rolling onto the core to form a more compact roll. Dispensers are described that are designed to hold the roll mounted bags in both folded and unfolded form. The dispensers include a separating tongue designed to engage the U-shaped cutout and permit the bags to be dispensed from the bottom of the bag roll. The dispensers are designed for mounting to either vertical or horizontal surfaces and function efficiently in very limited spaces.

[0013] Notwithstanding the prior art, the present invention is neither taught nor rendered obvious thereby. The present invention eliminates the need for dispensers that open bags or that start the opening process by approaching the problem from the standpoint of eliminating the sticking problem at its source.

SUMMARY OF THE INVENTION

[0014] The present invention relates to a selectively embossed plastic film bag, which includes: (a) a front panel and a back panel, the front panel and the back panel being formed of a flexible plastic film, and each having an inside and an outside, and each having a top, a bottom, a left side and a right side, the front panel having a predetermined width W at it's top and having a predetermined height H, the

back panel and the front panel being connected to one another at the sides and the bottom and being open at the top to establish the bag; (b) an embossment located on only the front panel, the embossment having a width of about 30% to 100% of the width W, and the embossment having a height of about 2% to about 100% of the height, H.

[0015] In some embodiments, the selectively embossed plastic film bag embossment has a width equal to at least 50% of the width W, typically centered. However, in some preferred embodiments, the selectively embossed plastic film bag embossment has a width equal to the width W, i.e., it runs the full width of the bag front panel.

[0016] In some embodiments, the selectively embossed plastic film bag front panel and back panel are connected to one another at their sides in a continuous seamless tube form and are heat sealed at their bottoms. In other embodiments, the selectively embossed plastic film bag front panel and back panel are heat sealed to one another at their sides and at their bottoms.

[0017] Although the embossment may be near the top of the front panel, in some preferred embodiments, the selectively embossed plastic film bag embossments are contiguous to the top of the front panel.

[0018] In some preferred embodiments, the selectively embossed plastic film bag embossment is within a topmost 20% of the front panel and has a height equal to about 2% to about 20% of the height H, and more preferrably, has a height equal to about 5% to about 10% of the height H.

[0019] Although not limited thereto, in some preferred embodiments, the front panel and the back panel are formed of a flexible plastic film, and each having an inside and an outside, and each having a top, a bottom, a left side and a right side, the front panel has a predetermined height H, while the back panel has a height that is greater than the height H of the front panel to create a tuck and lock bag.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] The present invention should be more fully understood when the specification herein is taken in conjunction with the drawings appended hereto wherein:

[0021] **FIG. 1** is a front view of one embodiment of the present invention selectively embossed plastic film bag;

[0022] **FIG. 2** is a top view of the present invention bag shown in **FIG. 1** above;

[0023] **FIG. 3** is atop view of an alternative embodiment bag;

[0024] **FIG. 4** is a front view of the embodiment of the present invention selectively embossed plastic film bag shown in **FIG. 3**;

[0025] **FIG. 5** is a front view of another embodiment of the present invention selectively embossed plastic film bag;

[0026] **FIG. 6** is a front view of another embodiment of the present invention selectively embossed plastic film bag;

[0027] **FIG. 7** is a front view of one embodiment of the present invention selectively embossed plastic film bag;

[0028] **FIG. 8** illustrates a present invention bag with printing on the embossment;

[0029] **FIG. 9** illustrates a present invention bag with an embossed front flap; and,

[0030] **FIG. 10** shows a present invention bag assembly with a rack header and a plurality of bags.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

[0031] The prior art produce bags have a number of disadvantages that are overcome by the present invention. For example, the need for dispensers that partially open the bags is eliminated. Concomitantly, the cost of making, shipping, installing and maintaining dispensers are also eliminated. Also, the bags themselves do not stick together and may be slid open by the mere countermotion of two opposite side holding fingers.

[0032] **FIGS. 1 and 2** illustrate front and top views respectively of present invention plastic film bag **1**. Bag **1** has a front **3** with a front top**5**, bottom **7**, left side **9** and right side **11**. Front panel **3** is connected at its sides and bottom to back panel **13** (**FIG. 2**) to form a bag. In this case, it is connected on its sides to one another by virtue of it being formed from an extruded tube. The tube is cut and heat sealed or welded at sealed seam **7** at its bottom so that it is closed on the sides and bottom, and open at the top to create a bag. The front panel **3** has a height H, and a width W measured at its top. At its topmost area, front panel **3** has an embossment **15**, here, running the entire width W and about 40% of its height H. The embossment creates an easy movement area between the front panel **3** and the back panel **13** so that the bag is easily opened by a user.

[0033] **FIGS. 3 and 4** show another present invention bag **30** in its top and front views, respectively. Bag **30** has a front panel **31** with a top **33**, a bottom **39**, a left side **37** and a right side **35**. There is a back panel **51** with a top **53**. Thus, in this embodiment, front panel **31** is shorter than back panel **53**, and they form a tuck and lock bag. The front and back panels are heat sealed at side seams **45** and **47**, and bottom seam **43**. At the top **33** and downwardly therefrom, on center, is and embossed area **41**. This serves the same function and provides the same advantage as embossment **15** of **FIG. 1** above.

[0034] **FIG. 5** shows another present invention embodiment plastic film bag **60**. It has a front panel **61** with sides **65** and **67**, bottom **63** and top **69**. Near top **69**, but about 5% of height H**60** below top **69** is an embossed panel area **71**. This functions in a manner similar to the embossed areas described above. These embossments are located on the front panel only, and are preferably small areas near or contiguous to the top of the front panel of the bag. Embossments create irregular topographies and thus establish high areas and low areas on the front surface. Typical plastic film bags have a thickness of about 0.004 millimeters to about 0.040 millimeters. The embossments are struck on the outside front panel or via relief, and thus create a topography variation of about 0.001 millimeters to about 0.020 millimeters.

[0035] **FIG. 6** shows another present invention plastic film bag **80** with front panel **81** and back panel **95**. Front panel **81** has a top **83**, sides **85** and **87**, and a bottom **89**. It has a height H**80** and a back panel **95** has a height greater than H**80** to create a tuck and lock bag. Top most area **91** of front

panel **81** is embossed for the advantages set forth above. The height of embossed area **91** is less than 20% of the full height H**80** of front panel **81**.

[**0036**] **FIG. 7** shows a present invention plastic film bag **100** with identically sized front and back panels. Here, front panel **101** has an open top **103**, sides **105** and **109**, and a bottom **107**. The sides and bottom are heat sealed to the back panel at seems **111**, **115** and **113**, respectively. The entire front panel **101** includes embossment **120**.

[**0037**] **FIG. 8** illustrates a present invention bag **801** wherein ti is the same as bag **80** of **FIG. 6**, except for the printing. Thus, identical elements are identically numbered and are not repeated here. Front panel **81**, both on and off embossment **91**, contains printed matter **803**, applied by conventional printing methods. Thus, this embodiment is with printing on the embossment.

[**0038**] **FIG. 9** illustrates a present invention bag **901** with an embossed front flap **911**, connected to top **909** of front panel **903**. Back panel **905** is connected to front panel **903**, as shown, with bottom **907** and top **913**.

[**0039**] **FIG. 10** shows a present invention bag **1001** assembly with a rack header **1003** and a plurality of bags **1005**. Rack header **1003** contains 3 openings **1007**, **1009**, and **1011** for mounting on a conventional rack or wall unit (not shown). Each bag of the plurality of bags **1005** are identical. Front bag **1015** has a front panel as shown with perforation or other removal provisions at it's top **1017**. There is a half inch high area **1019** and below it, embossment **1021**. These bags may be individually removed from header **1003** and are easily opened due to embossment **1021**.

[**0040**] Obviously, numerous modifications and variations of the present invention are possible in light of the above teachings. It is therefore understood that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described herein.

What is claimed is:

1. A selectively embossed plastic film bag, which comprises:

(a) a front panel and a back panel, said front panel and said back panel being formed of a flexible plastic film, and each having an inside and an outside, and each having a top, a bottom, a left side and a right side, said front panel having a predetermined width W at it's top and having a predetermined height H, said back panel and said front panel being connected to one another at said sides and said bottom and being open at said top to establish said bag;

(b) an embossment located on said front panel, said embossment having a width of about 30% to 100% of said width W, and said embossment having a height of about 2% to about 100% of said height, H.

2. The selectively embossed plastic film bag of claim 1 wherein said embossment has a width equal to at least 50% of said width W.

3. The selectively embossed plastic film bag of claim 1 wherein said embossment has a width equal to said width W.

4. The selectively embossed plastic film bag of claim 1 wherein said front panel and said back panel are connected to one another at their sides in a continuous seamless tube form and are heat sealed at their bottoms.

5. The selectively embossed plastic film bag of claim 1 wherein said front panel and said back panel are heat sealed to one another at their sides and at their bottoms.

6. The selectively embossed plastic film bag of claim 1 wherein said embossment is contiguous to said top of said front panel.

7. The selectively embossed plastic film bag of claim 1 wherein said embossment is within a topmost 20% of said front panel and has a height equal to about 2% to about 20% of said height H.

8. The selectively embossed plastic film bag of claim 1 wherein said front panel includes a flap and said flap includes at least a portion of said embossment.

9. The selectively embossed plastic film bag of claim 1 wherein said embossment is within a topmost 20% of said front panel and has a height equal to about 5% to about 10% of said height H.

10. The selectively embossed plastic film bag of claim 1 wherein printing has been applied on said embossment on said front panel.

11. A selectively embossed plastic film bag assembly, which comprises:

(I.) A header having a front and a back and being connected to a plurality of sequentially stacked, selectively embossed plastic film bags:

(II.) Said plurality of selectively embossed plastic film bags, each of said bags including:

(a) a front panel and a back panel, said front panel and said back panel being formed of a flexible plastic film, and each having an inside and an outside, and each having a top, a bottom, a left side and a right side, said front panel having a predetermined width W at it's top and having a predetermined height H, said back panel having a height that is greater than said height H of said front panel to create a tuck and lock bag, said back panel and said front panel being connected to one another at said sides and said bottom and being open at said top to establish said bag;

(b) an embossment located on said front panel, said embossment having a width of about 30% to 100% of said width W, and said embossment having a height of about 2% to about 100% of said height, H.

12. The selectively embossed plastic film bag assembly of claim 11 wherein said embossment has a width equal to at least 50% of said width W.

13. The selectively embossed plastic film bag assembly of claim **111** wherein said embossment has a width equal to said width W.

14. The selectively embossed plastic film bag assembly of claim 11 wherein said front panel and said back panel are connected to one another at their sides in a continuous seamless tube form and are heat sealed at their bottoms.

15. The selectively embossed plastic film bag assembly of claim 11 wherein said front panel and said back panel are heat sealed to one another at their sides and at their bottoms.

16. The selectively embossed plastic film bag assembly of claim **111** wherein said embossment is contiguous to said top of said front panel.

17. The selectively embossed plastic film bag assembly of claim 11 wherein said embossment is within a topmost 20% of said front panel and has a height equal to about 2% to about 20% of said height H.

18. The selectively embossed plastic film bag assembly of claim 11 wherein said front panel includes a flap and said flap includes at least a portion of said embossment.

19. The selectively embossed plastic film bag assembly of claim 11 wherein said embossment is within a topmost 20% of said front panel and has a height equal to about 5% to about 10% of said height H.

20. The selectively embossed plastic film bag assembly of claim 11 wherein

printing has been applied on said embossment on said front panel.

* * * * *