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(54) **SEALABLE BAG HAVING AN INDICIA FOR USE IN VACUUM PACKAGING**

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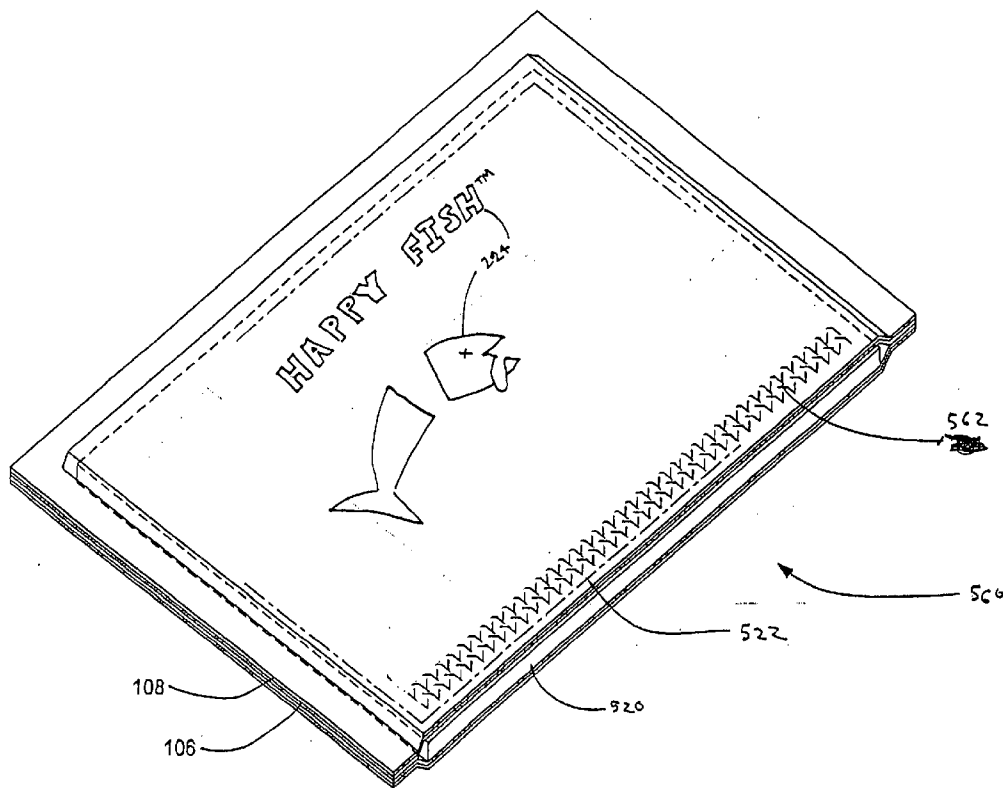
(57) **ABSTRACT**

(22) Filed: **Mar. 4, 2004**

**Related U.S. Application Data**

(60) Provisional application No. 60/451,954, filed on Mar. 5, 2003. Provisional application No. 60/452,168, filed on Mar. 5, 2003. Provisional application No. 60/452,138, filed on Mar. 5, 2003. Provisional application No. 60/452,172, filed on Mar. 5, 2003. Provisional application No. 60/452,171, filed on Mar. 5, 2003.

A vacuum bag comprises a first panel and a second panel, wherein each panel comprises a gas-impermeable base layer and a heat-sealable inner layer with at least one panel having indicia. The indicia can be informative, decorative, and/or functional, and optionally can be colored so that the indicia can be easily identified by a user. This description is not intended to be a complete description of, or limit the scope of, the invention. Other features, aspects, and objects of the invention can be obtained from a review of the specification, the figures, and the claims.



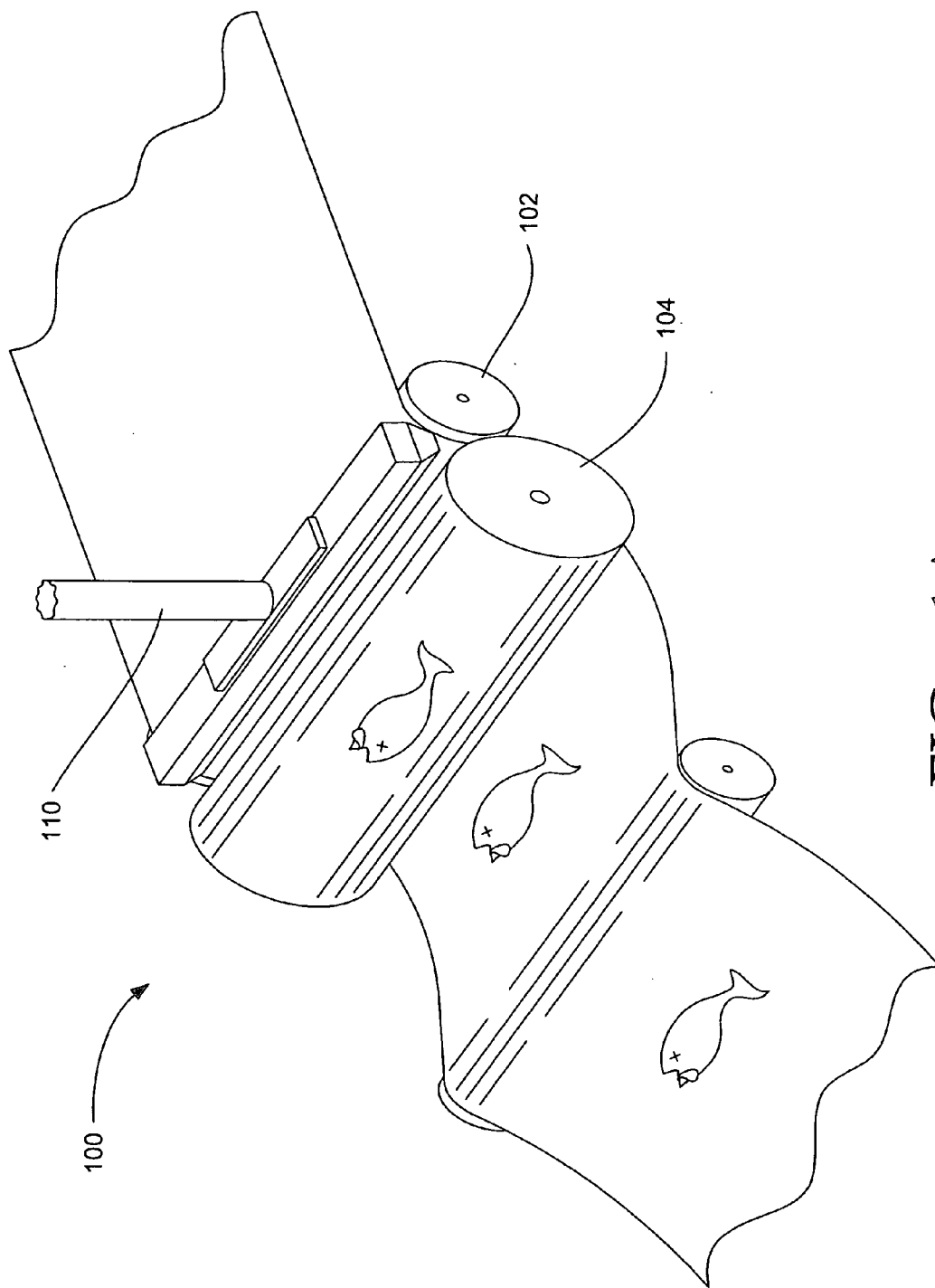
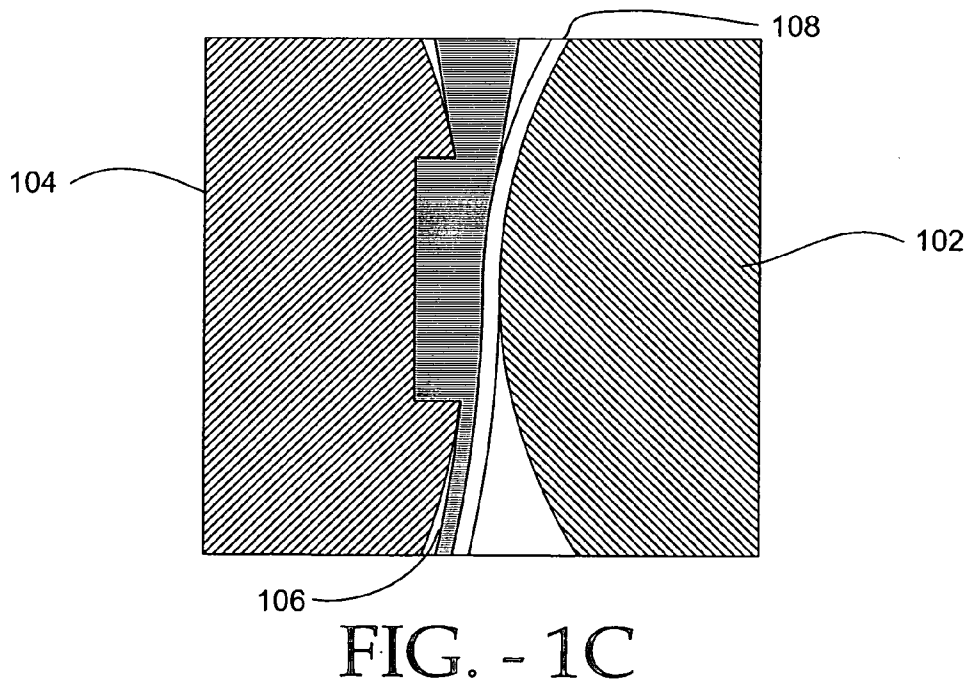
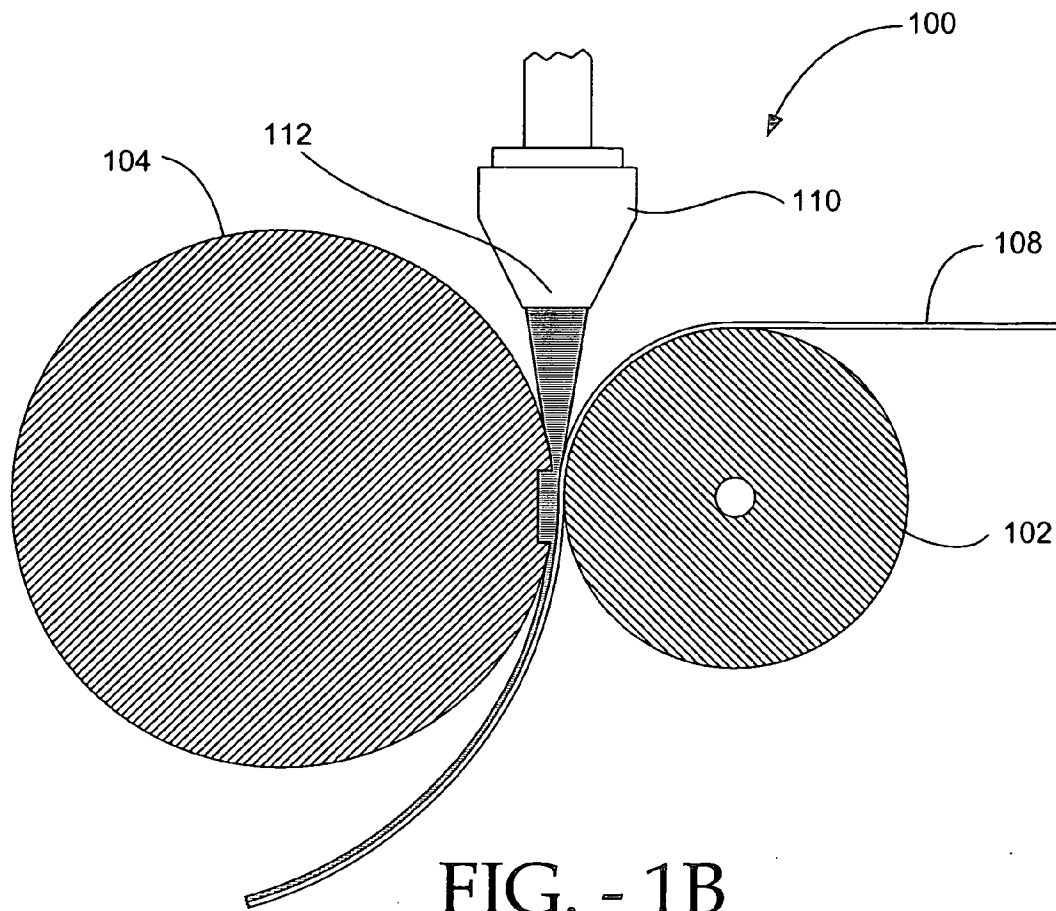


FIG. - 1A



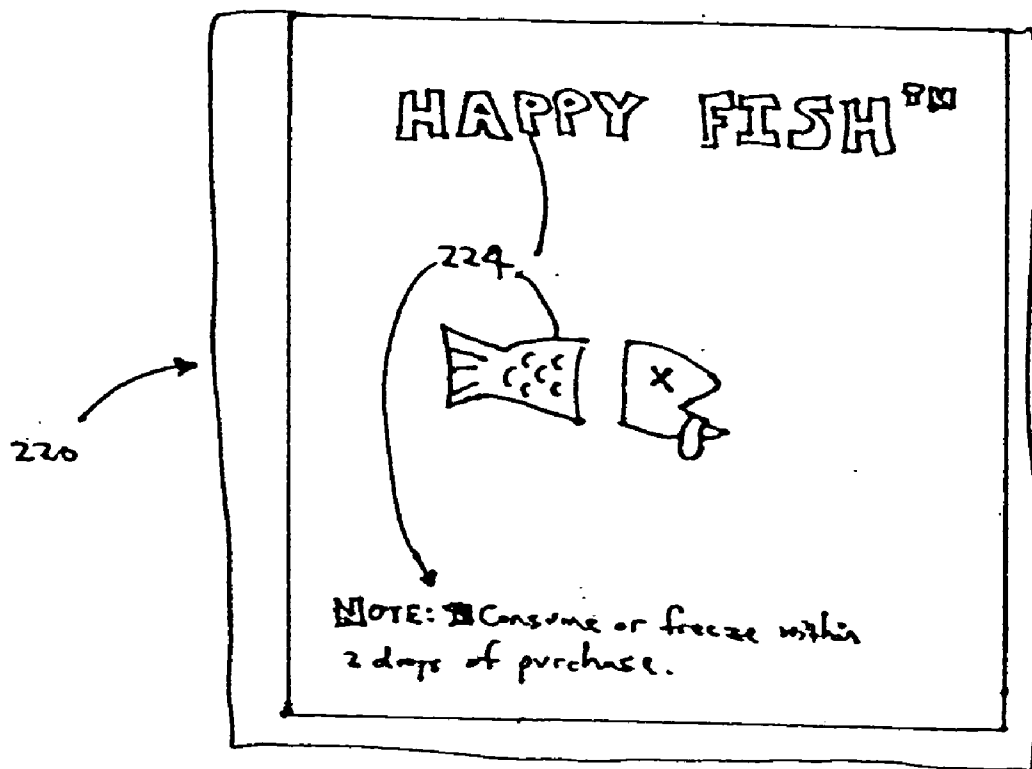


FIG. 2A

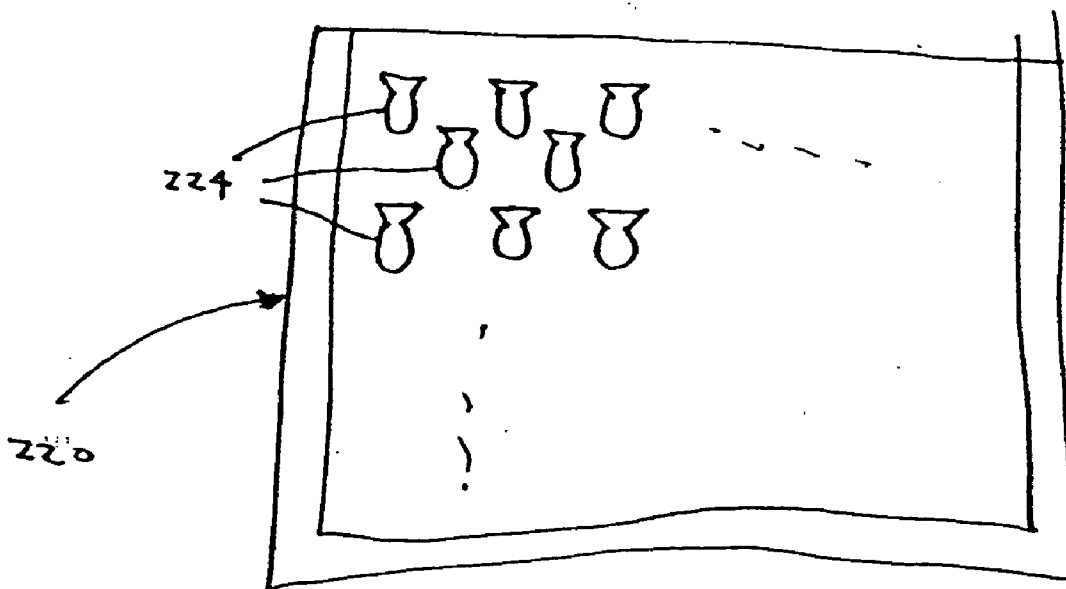


FIG. 2B

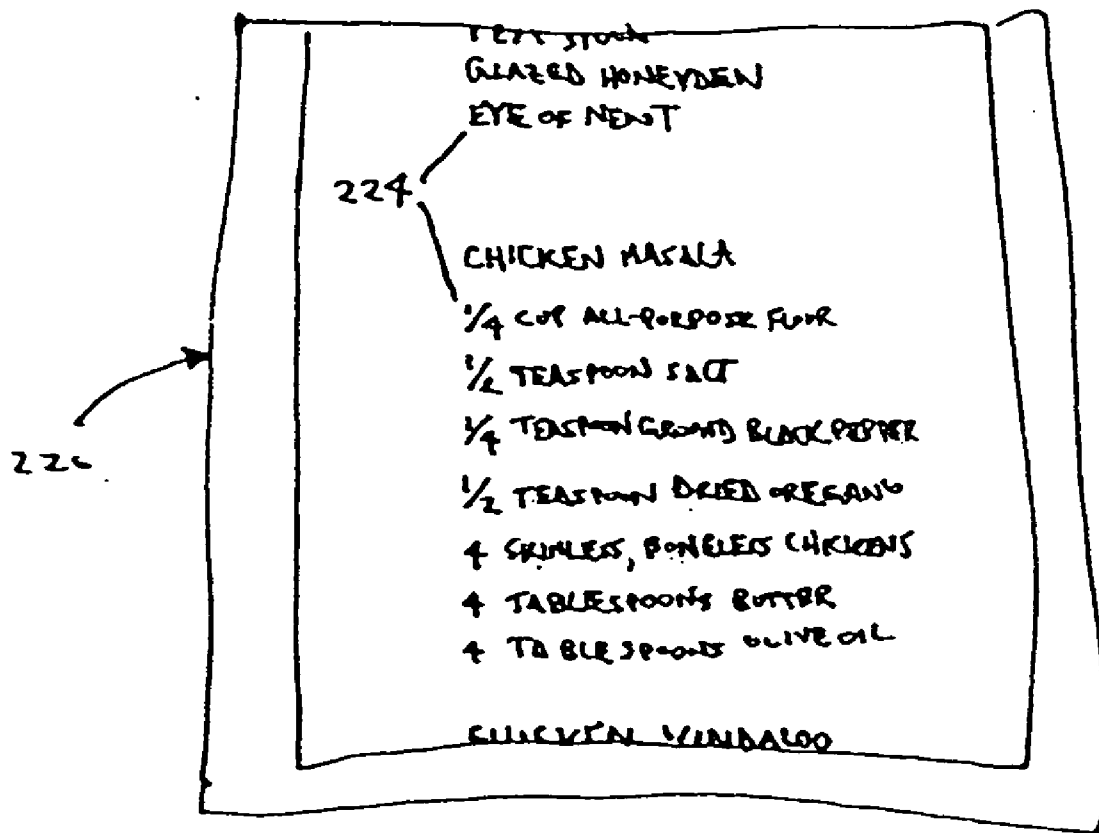


FIG. 2C

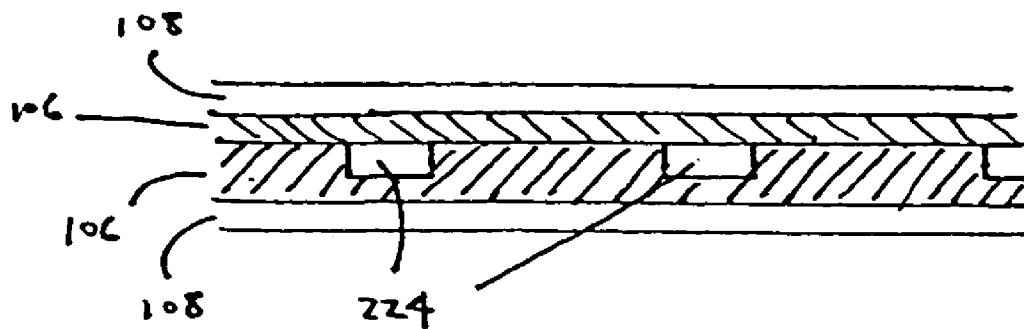


FIG. 3A

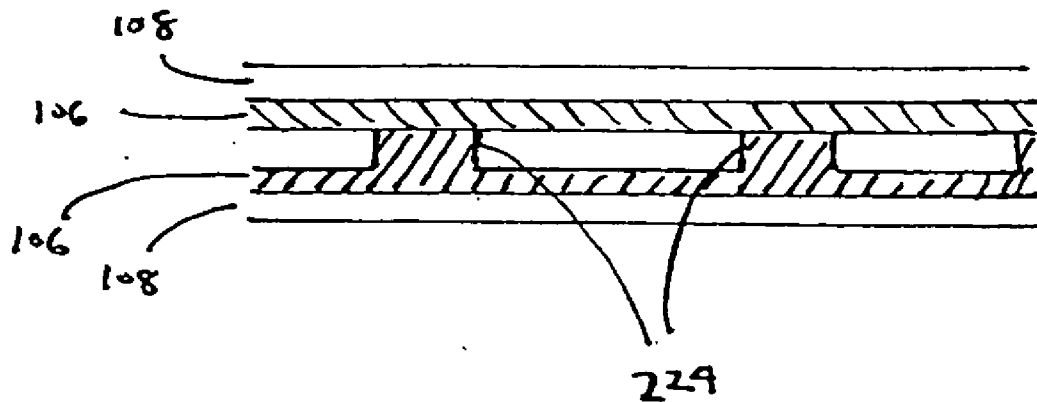


FIG. 3B

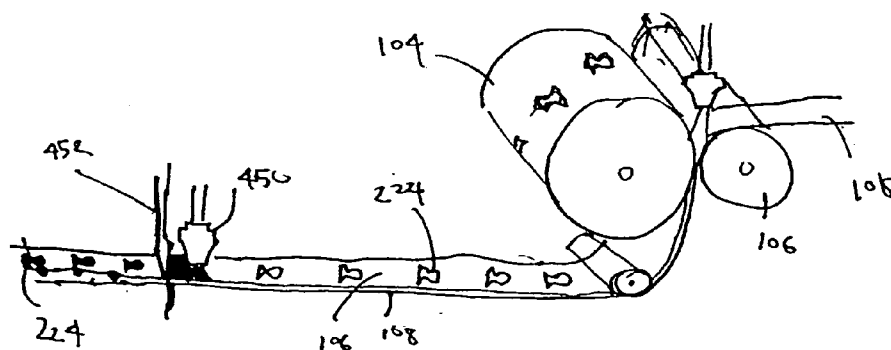


FIG. 4A

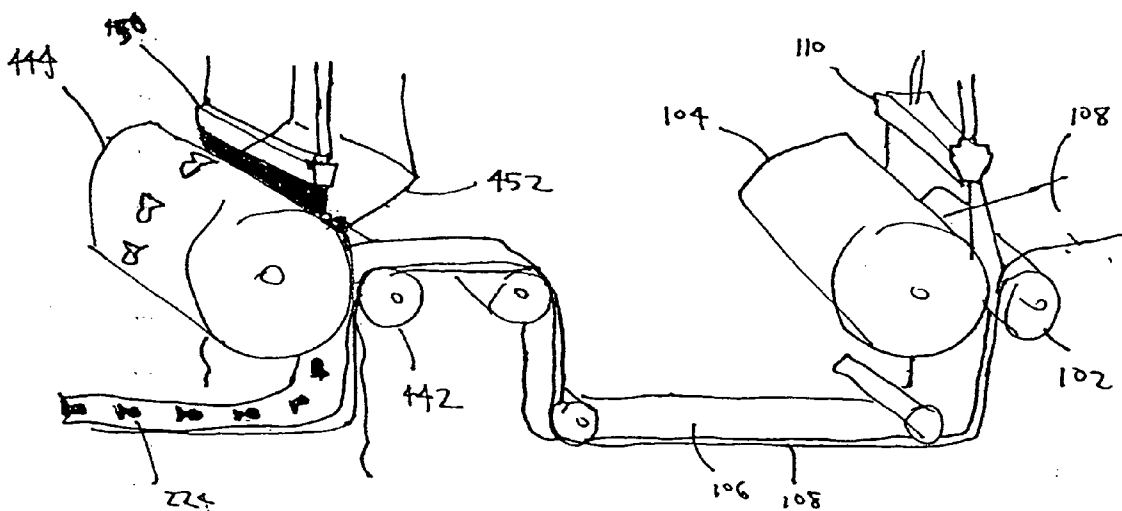
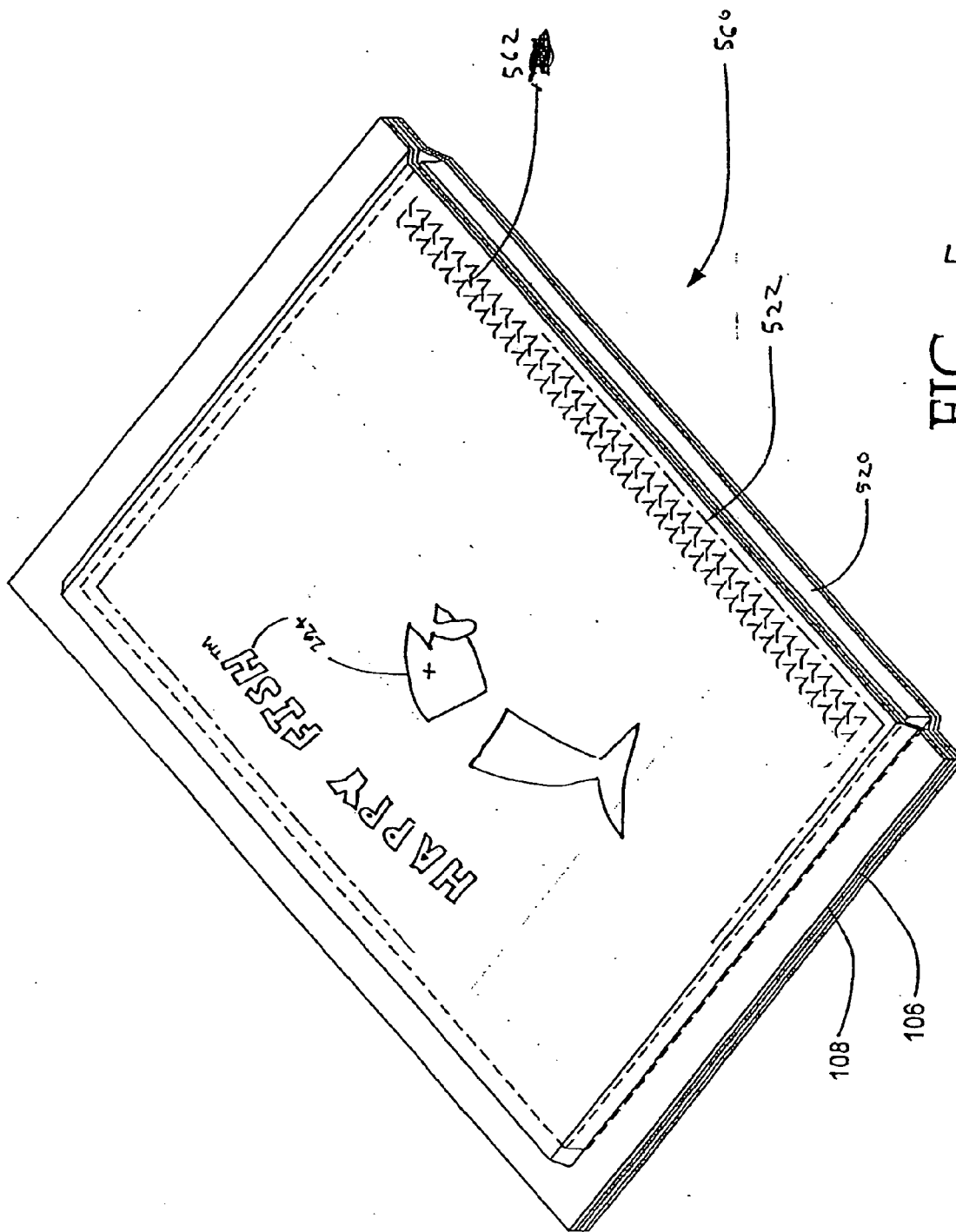


FIG. 4B





**SEALABLE BAG HAVING AN INDICIA FOR USE IN VACUUM PACKAGING**

**PRIORITY CLAIM**

[0001] This application claims priority to the following U.S. Provisional Patent Application:

[0002] U.S. Provisional Patent Application No. 60/451,954, entitled "SEALABLE BAG HAVING AN INDICIA FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01179US0).

**CROSS-REFERENCE TO RELATED PATENT APPLICATIONS**

[0003] This U.S. patent application incorporates by reference all of the following co-pending applications:

[0004] U.S. Provisional Patent Application No. 60/452,168, entitled "LIQUID-TRAPPING BAG FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01177US0);

[0005] U.S. Provisional Patent Application No. 60/452,138, entitled "METHOD FOR MANUFACTURING LIQUID-TRAPPING BAG FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01177US1);

[0006] U.S. Provisional Patent Application No. 60/452,172, entitled "SEALABLE BAG HAVING AN INTEGRATED TRAY FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01178US0);

[0007] U.S. Provisional Patent Application No. 60/452,171, entitled "METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INTEGRATED TRAY FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01178US1);

[0008] U.S. Provisional Patent Application No. 60/451,948, entitled "METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INDICIA FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01179US1);

[0009] U.S. Provisional Patent Application No. 60/452,142, entitled "SEALABLE BAG HAVING AN INTEGRATED ZIPPER FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01180US0);

[0010] U.S. Provisional Patent Application No. 60/452,021, entitled "METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INTEGRATED ZIPPER FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01180US1);

[0011] U.S. Provisional Patent Application No. 60/451,955, entitled "SEALABLE BAG HAVING AN INTEGRATED VALVE STRUCTURE FOR

USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01181US0);

[0012] U.S. Provisional Patent Application No. 60/451,956, entitled "METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INTEGRATED VALVE STRUCTURE FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01181US1);

[0013] U.S. Provisional Patent Application No. 60/452,157, entitled "SEALABLE BAG HAVING AN INTEGRATED TIMER/SENSOR FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01182US0);

[0014] U.S. Provisional Patent Application No. 60/452,139, entitled "METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INTEGRATED TIMER/SENSOR FOR USE IN VACUUM PACKAGING," by Henry Wu, et al., filed Mar. 5, 2003 (Attorney Docket No. TILA-01182US1); and

[0015] U.S. patent application Ser. No. 10/169,485, entitled "METHOD FOR PREPARING AIR CHANNEL EQUIPPED FILM FOR USE IN VACUUM PACKAGE," filed Jun. 26, 2002;

[0016] U.S. patent application Ser. No. \_\_\_\_\_, entitled "LIQUID-TRAPPING BAG FOR USE IN VACUUM PACKAGING," Attorney Docket No. TILA-01177US2, filed concurrently;

[0017] U.S. patent application Ser. No. \_\_\_\_\_, entitled "METHOD FOR MANUFACTURING LIQUID-TRAPPING BAG FOR USE IN VACUUM PACKAGING," Attorney Docket No. TILA-01177US3, filed concurrently;

[0018] U.S. patent application Ser. No. \_\_\_\_\_, entitled "SEALABLE BAG HAVING AN INTEGRATED TRAY FOR USE IN VACUUM PACKAGING," Attorney Docket No. TILA-01178US2, filed concurrently;

[0019] U.S. patent application Ser. No. \_\_\_\_\_, entitled "METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INTEGRATED TRAY FOR USE IN VACUUM PACKAGING," Attorney Docket No. TILA-01178US3, filed concurrently;

[0020] U.S. patent application Ser. No. \_\_\_\_\_, entitled "METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INDICIA FOR USE IN VACUUM PACKAGING," Attorney Docket No. TILA-01179US3, filed concurrently;

[0021] U.S. patent application Ser. No. \_\_\_\_\_, entitled "SEALABLE BAG HAVING AN INTEGRATED ZIPPER FOR USE IN VACUUM PACKAGING," Attorney Docket No. TILA-01180US2, filed concurrently;

[0022] U.S. patent application Ser. No. \_\_\_\_\_, entitled "METHOD FOR MANUFACTURING A

SEALABLE BAG HAVING AN INTEGRATED ZIPPER FOR USE IN VACUUM PACKAGING,” Attorney Docket No. TILA-01180US3, filed concurrently;

[0023] U.S. patent application Ser. No. \_\_\_\_\_, entitled “SEALABLE BAG HAVING AN INTEGRATED VALVE STRUCTURE FOR USE IN VACUUM PACKAGING,” Attorney Docket No. TILA-01181US2, filed concurrently;

[0024] U.S. patent application Ser. No. \_\_\_\_\_, entitled “METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INTEGRATED VALVE STRUCTURE FOR USE IN VACUUM PACKAGING,” Attorney Docket No. TILA-01181US3, filed concurrently;

[0025] U.S. patent application Ser. No. \_\_\_\_\_, entitled “SEALABLE BAG HAVING AN INTEGRATED TIMER/SENSOR FOR USE IN VACUUM PACKAGING,” Attorney Docket No. TILA-01182US2, filed concurrently; and

[0026] U.S. patent application Ser. No. \_\_\_\_\_, entitled “METHOD FOR MANUFACTURING A SEALABLE BAG HAVING AN INTEGRATED TIMER/SENSOR FOR USE IN VACUUM PACKAGING,” Attorney Docket No. TILA-01182US3, filed concurrently.

#### FIELD OF THE INVENTION

[0027] The present invention relates to bags for use in vacuum packaging and methods and devices for manufacturing bags for use in vacuum packaging.

#### BACKGROUND

[0028] Methods and devices for preserving perishable foods such as fish and meats, processed foods, prepared meals, and left-overs, and non-perishable items are widely known, and widely varied. Foods are perishable because organisms such as bacteria, fungus and mold grow over time after a food container is opened and the food is left exposed to the atmosphere. Most methods and devices preserve food by protecting food from organism-filled air. A common method and device includes placing food into a gas-impermeable plastic bag, evacuating the air from the bag using suction from a vacuum pump or other suction source, and tightly sealing the bag.

[0029] A bag for use in vacuum packaging can consist of a first panel and second panel, each panel consisting of a single layer of heat-sealable, plastic-based film (for example, polyethylene). The panels are sealed together along a substantial portion of the periphery of the panels by heat-sealing techniques so as to form an envelope. Perishable products, such as spoilable food, or other products are packed into the envelope via the unsealed portion through which air is subsequently evacuated. After perishable products are packed into the bag and air is evacuated from the inside of the bag, the unsealed portion is heated and pressed such that the panels adhere to each other, sealing the bag.

[0030] U.S. Pat. No. 2,778,173, incorporated herein by reference, discloses a method for improving the evacuation of air from the bag by forming channels in at least one of the panels with the aid of embossing techniques. Air escapes

from the bag along the channels during evacuation. The embossing forms a pattern of protuberances on at least one of the panels. The protuberances can be discrete pyramids, hemispheres, etc., and are formed by pressing a panel using heated female and male dies. The first panel is overlaid on the second panel such that the protuberances from one panel face the opposite panel. The contacting peripheral edges of the panels are sealed to each other to form an envelope having an inlet at an unsealed portion of the periphery. The perishable or other products are packed into the envelope through the inlet, and the inlet is sealed. Thereafter, an opening is pierced in a part of the panel material that communicates with the channels, air is removed from the interior of the envelope through the channels and opening, and the opening is sealed. This type of bag requires two additional sealing steps after the perishable or other product is packed into the envelope. One further problem is that embossing creates impressions on the plastic such that indentations are formed on the opposite side of the panel.

[0031] To avoid additional sealing steps, a vacuum bag is formed having a first panel and a second panel consisting of laminated films. Each panel comprises a heat-sealable inner layer, a gas-impermeable outer layer, and optionally, one or more intermediate layers. Such a bag is described in U.S. Pat. No. Re. 34,929, incorporated herein by reference. At least one film from at least one panel is embossed using an embossing mold to form protuberances and channels defined by the space between protuberances, so that air is readily evacuated from the vacuum bag.

[0032] U.S. Pat. No. 5,554,423, incorporated herein by reference, discloses still another bag usable in vacuum packaging. The bag consists of a first and second panel, each panel consisting of a gas-impermeable outer layer and a heat-sealable inner layer. A plurality of heat-sealable strand elements are heat bonded at regular intervals to the inner layer of either the first panel or the second panel. The spaces between strand elements act as channels for the evacuation of air. The strand elements are extruded from an extrusion head and heat bonded to the heat-sealable layer by use of pressure rolls. Separate equipment is required for producing strand elements, and a procedure of heat bonding a plurality of strand elements at regular intervals to the heat-sealable inner layer is complicated. Also, various shapes of pattern are hard to form using this process.

#### BRIEF DESCRIPTION OF THE FIGURES

[0033] Further details of embodiments of the present invention are explained with the help of the attached drawings in which:

[0034] FIG. 1A is a perspective view of a method for manufacturing a vacuum bag in accordance with one embodiment of the present invention;

[0035] FIG. 1B is a side view of the method shown in FIG. 1A illustrating the embossing method used in an embodiment of the present invention;

[0036] FIG. 1C is a close-up view of a portion of FIG. 1B;

[0037] FIG. 2A-C are plan views of exemplary indicia on a panel in accordance with embodiments of the present invention, manufactured by the process shown in FIGS. 1A and B;

[0038] FIG. 3A is a cross-section of a portion of a first panel as illustrated in FIG. 2B, overlapping a second panel of an embodiment of the present invention, wherein the indicia are indented into the inner layer;

[0039] FIG. 3B is a cross-section of a portion of a first panel as illustrated in FIG. 2B, overlapping a second panel of an embodiment of the present invention, wherein the indicia are protuberances;

[0040] FIG. 4A is a perspective view of a method for manufacturing a vacuum bag having colored indicia in accordance with one embodiment of the present invention;

[0041] FIG. 4B is a perspective view of a method for manufacturing a vacuum bag having colored indicia in accordance with an alternative embodiment of the present invention; and

[0042] FIG. 5 is a perspective view of a vacuum bag in accordance with one embodiment of the present invention.

#### DETAILED DESCRIPTION

[0043] FIGS. 1A-1C illustrate one embodiment of a method for manufacturing a vacuum bag in accordance with the present invention. The vacuum bag comprises a first panel and a second panel, wherein each panel comprises a gas-impermeable base layer 108 and a heat-sealable inner layer 106 with at least one panel having indicia. A laminating roll 102 and a cooling roll 104 are arranged so that the heat-sealable inner layer 106 can be laminated to the gas-impermeable base layer 108 as the melt-extruded resin is cooled. As illustrated in FIG. 1B, the gap between the laminating roll 102 and the cooling roll 104 can be controlled according to specifications (for example, thickness) of a panel for use in vacuum packaging. The temperature of the cooling roll 104 is maintained in a range such that the melt-extruded resin is sufficiently cooled to form the desired pattern. For example, a temperature range of about  $-15^{\circ}$  C. to about  $-10^{\circ}$  C. can be sufficient to properly form the desired pattern. The temperature range of the cooling roll 104 can vary according to the composition of the resin, the composition of the gas-impermeable base layer 108, environmental conditions, etc. and can require calibration. Also, the cooling roll 104 can be sized to have a larger diameter than the laminating roll 102, thereby bringing the melt-extruded resin into contact with more cooled surface area. For example, the diameter of the cooling roll 104 can be about one-and-a-half to about three times as large (or more) as that of the laminating roll 102.

[0044] The heat-sealable inner layer 106 typically comprises a thermoplastic resin. For example, the resin can be comprised of polyethylene (PE) suitable for preserving foods and harmless to a human body. A vacuum bag can be manufactured by overlapping two panels such that the heat-sealable inner layers 106 of the two panels are brought into contact and heat is applied to a portion of the periphery of the panels to form an envelope. The thermoplastic resin can be chosen so that the two panels strongly bond to each other when sufficient heat is applied.

[0045] The gas-impermeable base layer 108 is fed to the gap between the cooling roll 104 and the laminating roll 102 by a feeding means (not shown). The gas-impermeable base layer can be comprised of polyester, polyamide, ethylene vinyl alcohol (EVOH), nylon, or other material having

similar properties and capable of being used in this manufacturing process, and also capable of being heated. The gas-impermeable base layer 108 can consist of one layer, or two or more layers, and can be transparent so that indicia is visible through the gas-impermeable base layer 108. When employing a multilayer-structured base layer, it should be understood that a total thickness thereof is also adjusted within the allowable range for the total gas-impermeable base layer 108.

[0046] An extruder 110 is positioned in such a way that the melt-extruded resin is layered on the gas-impermeable base layer 108 by feeding the melt-extruded resin to the nip between the cooling roll 104 and the gas-impermeable layer 108. The resin is fed through a nozzle 112 of the extruder 110. The temperature of the melt-extruded resin is dependent on the type of resin used, and can typically range from about  $200^{\circ}$  C. to about  $250^{\circ}$  C. The amount of resin to be extruded into the laminating unit 100 is dependent on the desired thickness of the heat-sealable inner layer 106.

[0047] A pattern fabricated on the circumferential surface of the cooling roll 104 in accordance with one embodiment of the present invention can include protuberances and/or cavities or other pattern for forming indicia. The resin extruded from the nozzle 112 is pressed between the cooling roll 104 and the gas-impermeable base layer 108 and squeezed out where protuberances of the cooling roll 104 press into the resin, and/or the resin flows into the cavities of the cooling roll 104. The resin quickly cools and solidifies in the desired pattern while adhering to the gas-impermeable base layer 108, thereby forming the heat sealable inner layer 106 of the panel 220 as shown in FIG. 2A-2E. The heat-sealable inner layer 106 can be formed while the resin is sufficiently heated to allow the resin to flow, thereby molding the resin, unlike other methods adopting a post-embossing treatment where the heat-sealable inner layer is drawn by a die or embossed between male and female components.

[0048] The depth (or thickness) of indicia formed on the heat-sealable inner layer 106 of a panel 220 can be determined by the height of the protuberances (or depth of the cavities) of the cooling roll 104. Thus, the shape, width, and depth (or thickness) of the indicia can be controlled by changing the specifications for the protuberances and/or cavities of the cooling roll 104. FIG. 3A illustrates a cross-section of two panels in accordance with one embodiment of the present invention wherein protuberances of the cooling roll 104 impress indicia into the melt-extruded resin. The heat-sealable inner layer 106 can range from 0.5-6.0 mils in thickness at the indicia, and 1.0-12.0 mils in thickness between indicia, while the gas-impermeable base layer 108 can range from about 0.5-8.0 mils in thickness. FIG. 3B illustrates a cross-section of two panels in accordance with an alternative embodiment of the present invention wherein the cavities of the cooling roll 104 form indicia on the inner layer 106. The heat-sealable inner layer 106 for this alternative embodiment can range from 0.5-6.0 mils in thickness between indicia and 1.0-80.0 mils in thickness at the indicia. The dimensions of the inner layer 106 and the base layer 108 are set forth to illustrate, but are not to be construed to limit the dimensions.

[0049] FIG. 2A-2C are plan views of panels 220 formed by the cooling roll 104 for use in a vacuum bag, in which the heat-sealable inner layer 106 is molded in such a way that

indicia **224** are formed on the heat-sealable inner layer **106**. The indicia **224** can denote the intended contents of the bag, for example the indicia can resemble fish or poultry, etc. This can be useful for identifying the contents of a bag or for identifying pre-seasoned bags for marinating foods. Alternatively, the indicia **224** can be a trademark denoting the manufacturer or some other entity, for example. In other embodiments, the indicia **224** can be text, such as cooking or storing instructions or recipes. In still other embodiments, the indicia **224** can correspond to seasonal symbols such as snowmen or jack-o-lanterns. In still other embodiments, the indicia **224** can correspond to a name or mark of an owner of the contents. One of ordinary skill in the art can appreciate the different methods for communicating messages, both informative and whimsical.

[0050] The indicia **224** can also be used to improve a characteristic of the bag. For example, as shown in **FIG. 2B**, a pattern of protruding indicia **224** resembling fishes can be used to suspend contents such that liquid collects in the bag beneath the contents and between the indicia **224**. The indicia **224** can also act as channels for the evacuation of air and/or other gases from the bag.

[0051] In other embodiments, the indicia **224** can comprise a thermoplastic resin, wherein the thermoplastic resin is dyed or colored as desired so that the indicia is visually more apparent to a user. The colored indicia **224** can be applied to the surface, for example, in a separate manufacturing step. In one embodiment, shown in **FIG. 4A**, indicia **224** imprinted as described above can be subsequently filled with dyed resin melt-extruded from a second extruder **450**. Excess resin can be removed by a knife edge **452**, and the panel can be cooled so that the dyed resin adheres to the heat-sealable inner layer **106**, forming colored indicia.

[0052] In other embodiments, cavities and/or protuberances of the cooling roll **104** can include ink or dye so that indicia formed are colored by the ink or dye, while the melt-extruded resin surrounding the indicia is not colored by the ink or dye. The cavities and/or protuberances of the cooling roll **104** can be re-coated with ink or dye by a soft, saturated material mated to the cooling roll **104** as it rotates, thereby acting as an "inkpad" for the cooling roll **104**. Alternatively, the ink or dye can be "sweated" into the cavities and/or protuberances through pores in the surface of the cavities and/or protuberances. One of ordinary skill in the art can appreciate the different methods for applying ink to grooves.

[0053] **FIG. 4B** illustrates yet another embodiment in which a first layer of melt-extruded resin can be laminated to the gas-impermeable layer **108** as described above, however without any pattern. Subsequently, the laminated film can be fed to a gap between a second cooling roll **444** and a second laminating roll **442**, where a second extruder **450** feeds melt-extruded, dyed resin to the second cooling roll **444** having cavities corresponding to indicia **224**. A knife edge **452** removes excess resin as the second cooling roll **444** rotates, and the still-cooling dyed resin adheres to the laminated film to form raised, colored indicia **224**. Alternatively, the laminated film can be fed to an ink-jet printer, or other printing device. Accordingly, colored fish, for example, can be formed against a clear background or a background of another color.

[0054] **FIG. 5** illustrates a bag for use in vacuum packaging in accordance with one embodiment of the present

invention. The vacuum bag **560** comprises a first panel **520** overlapping a second panel **522**. At least one indicia **224** is formed on at least one panel **520,522** in accordance with an embodiment described above. A panel **522,520** optionally includes channels **562** for evacuating air and other gases from the bag. The channels **562** can be formed, for example, along a portion of the panel as described in the cross-referenced application "LIQUID-TRAPPING BAG FOR VACUUM PACKAGING," incorporated herein by reference. The heat-sealable inner layer **106** and the gas-impermeable base layer **108** of the first and second panels **520,522** are typically made of the same material respectively, but can alternatively be made of different materials that exhibit heat-sealability and gas-impermeability respectively. Additionally, at least one panel **520,522** can be transparent so that indicia is visible.

[0055] The features and structures described above can be combined with other manufacturing techniques to form a valve or other structure, tray, or integrated sensor, as described in the cross-referenced provisional applications, incorporated herein by reference. In other embodiments, the circumferential surfaces of the cooling rolls **104** described above can optionally include protuberances for forming perforations (not shown), such that a bag can be separated from a roll of bags by a customer.

[0056] As described above, the heat-sealable inner layer **106** is used as an inner layer and the gas-impermeable base layer **108** is used as an outer layer. The lower, left, and right edges of the first and the second panel **520,522** are bonded to each other by heating, so as to form an envelope for receiving a perishable or other product to be vacuum packaged. Once a perishable or other product is placed in the vacuum bag **560**, air and/or other gases can be evacuated from the bag **560**, for example by a vacuum sealing machine as described in the above referenced U.S. Pat. No. 4,941, 310, which is incorporated herein by reference. Once the air and/or other gases are evacuated to the satisfaction of the user, the inlet can be sealed by applying heat, thereby activating the heat-sealable inner layers **106** and bonding them together where contacted by the heat.

[0057] The foregoing description of preferred embodiments of the present invention has been provided for the purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise forms disclosed. It is to be understood that many modifications and variations will be apparent to the practitioner skilled in the art. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, thereby enabling others skilled in the art to understand the invention for various embodiments and with various modifications that are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims and their equivalence.

1. A bag adapted to receive an article, comprising:

a first panel defining at least one molded portion;  
a second panel; and

the first panel and the second panel secured together to form the bag;

wherein the at least one molded portion is an indicia.

- 2. A bag adapted to receive an article, comprising:
  - a first panel having:
    - a first outer layer; and
    - a first inner layer connected with the first outer layer, the first inner layer including at least one molded portion integrally formed with the first inner layer;
      - wherein the at least one molded portion is an indicia; and
  - a second panel connected with the first panel such that the first panel and the second panel form an envelope having an inlet, the second panel having:
    - a second outer layer; and
    - a second inner layer connected with the second outer layer.
- 3. The bag of claim 2, wherein the first outer layer and the second outer layer comprise a gas-impermeable material.
- 4. The bag of claim 3, wherein the gas-impermeable material is one of polyester, polyamide, ethylene vinyl alcohol, and nylon.
- 5. The bag of claim 2, wherein the first inner layer and the second inner layer comprise a thermoplastic resin.
- 6. The bag of claim 5, wherein the thermoplastic resin is polyethylene.
- 7. The bag of claim 2, wherein the indicia is information.
- 8. The bag of claim 7, wherein the information is one or more recipes.
- 9. The bag of claim 7, wherein the information is storage instructions.
- 10. The bag of claim 7, wherein the information is a label identifying the article.
- 11. The bag of claim 7, wherein the information is a trademark.
- 12. The bag of claim 7, wherein the information is one of a name and a mark of an owner of the article.
- 13. The bag of claim 2, wherein the indicia is a seasonal decoration.
- 14. The bag of claim 2, wherein at least a portion of the indicia includes a surface having a color different than a color of the first and second panel.
- 15. A bag adapted to receive an article, comprising:
  - a first panel including:
    - a first gas-impermeable layer; and
    - a first inner layer laminated to the first gas-impermeable layer, the first inner layer having a textured exposed surface;
      - wherein the textured exposed surface is an indicia;
  - a second panel including:
    - a second gas-impermeable layer; and
    - a second inner layer laminated to the second gas-impermeable layer;
 wherein the first panel is connected with the second panel to form an envelope such that the first inner layer opposes the second inner layer, the envelope including a heat-sealable opening for evacuating gas.

- 16. A heat-sealable bag adapted to receive an article, comprising:
  - a first panel including:
    - a first gas-impermeable layer;
    - at least one first intermediate layer connected with the first gas-impermeable layer; and
    - a first inner layer laminated to the at least one first intermediate layer, the first inner layer having a textured exposed surface;
  - wherein the textured exposed surface is an indicia; and
  - a second panel including:
    - a second gas-impermeable layer;
    - at least one second intermediate layer connected with the second gas-impermeable layer; and
    - a second inner layer laminated to the at least one second intermediate layer;
  - wherein the first panel is connected with the second panel to form an envelope such that the first inner layer opposes the second inner layer, the envelope including a heat-sealable opening for evacuating gas.
- 17. The bag of claim 16, wherein the first gas-impermeable layer and the second gas-impermeable layer comprise one of polyester, polyamide, ethylene vinyl alcohol, and nylon.
- 18. The bag of claim 16, wherein the first inner layer and the second inner layer comprise a thermoplastic resin.
- 19. The bag of claim 18, wherein the thermoplastic resin is polyethylene.
- 20. The bag of claim 16, wherein the indicia is information.
- 21. The bag of claim 20, wherein the information is one or more recipes.
- 22. The bag of claim 20, wherein the information is storage instructions.
- 23. The bag of claim 20, wherein the information is a label identifying the article.
- 24. The bag of claim 20, wherein the information is a trademark.
- 25. The bag of claim 20, wherein the information is one of a name and a mark of an owner of the article.
- 26. The bag of claim 16, wherein the indicia is a seasonal decoration.
- 27. The bag of claim 16, wherein at least a portion of the indicia includes a surface having a color different than a color of the first and second panel.
- 28. A system for forming a bag including a three-dimensional structure formed on at least one panel, comprising:
  - a cooling roll having one or more structures for forming one or more indicia;
  - a laminating roll;
  - a backing material;
  - a flowable material that can be flowed into the one or more structures to form the one or more indicia, the one or more indicia adhering to the backing material.