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(54) **PRODUCE SHIPPING CONTAINER**

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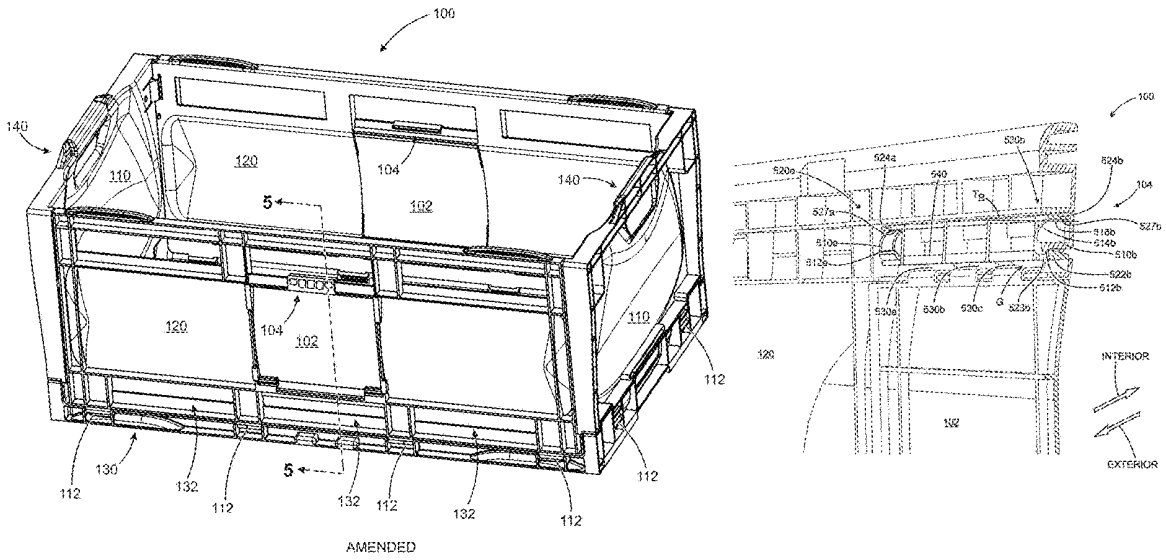
(57) **ABSTRACT**

A container having walls, one having a projection including a hook and an exterior surface opposite the hook having an external contact location, the hook extending away from the contact surface, the contact location disposed interiorly of the hook. The container includes a door, and a latch coupled to the door by a spring. The latch comprises a catch and a binding arm, and has a contact surface positioned to fit the projection between the catch and contact surface. The latch has a locked position in which the catch and hook maintain the door in the closed position, and an unlocked position in which the door is movable. The spring biases the latch into the locked position. Sufficient pressure on the latch overcomes the biasing to achieve the unlocked position, to allow the open position to be attained. When in the locked position, the contact surface faces the contact location.

11 Claims, 9 Drawing Sheets



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USPC 217/36, 40; 220/4.29, 7, 9.2, 9.3; 53/475
See application file for complete search history.

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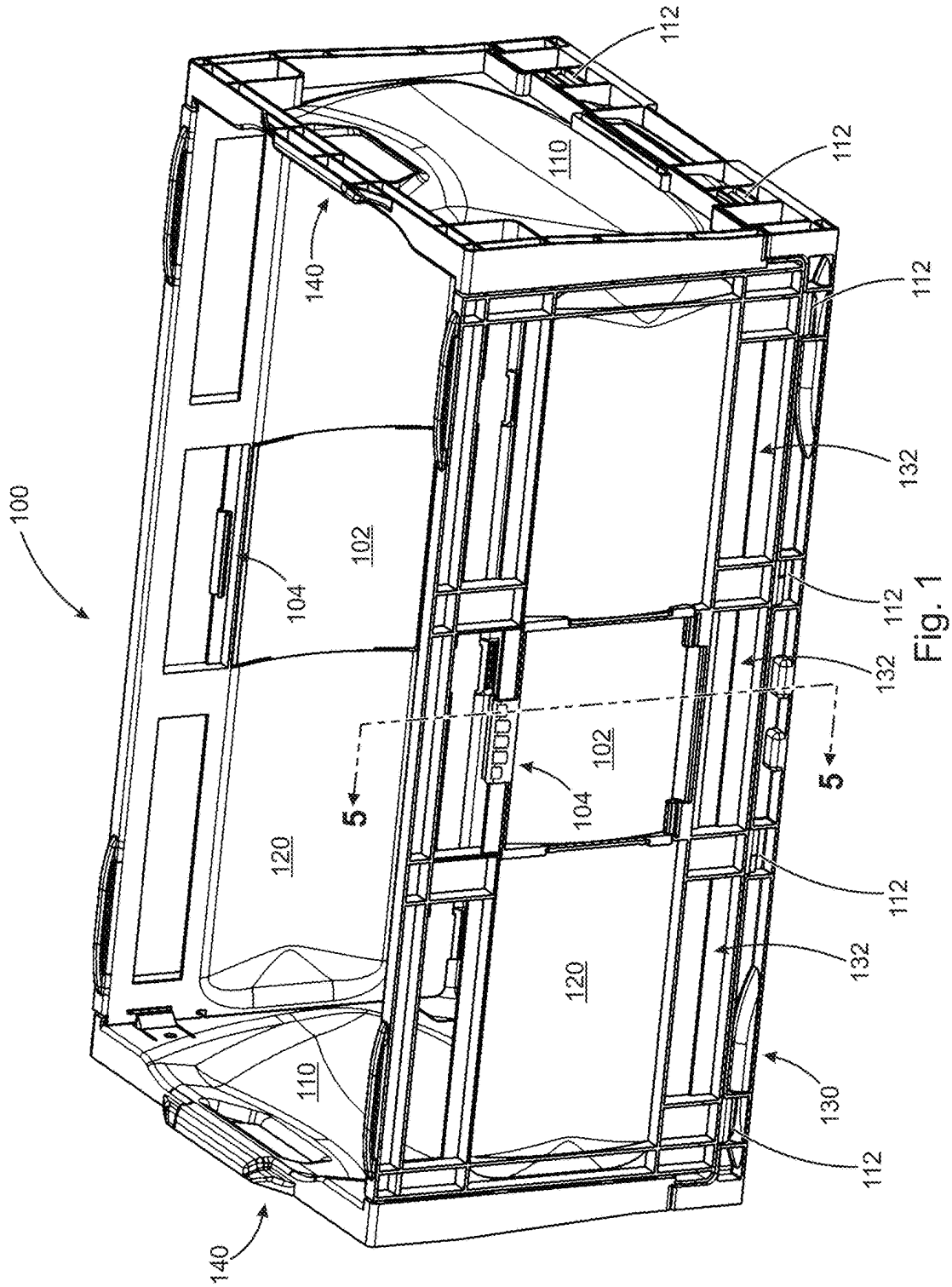

Fig. 1
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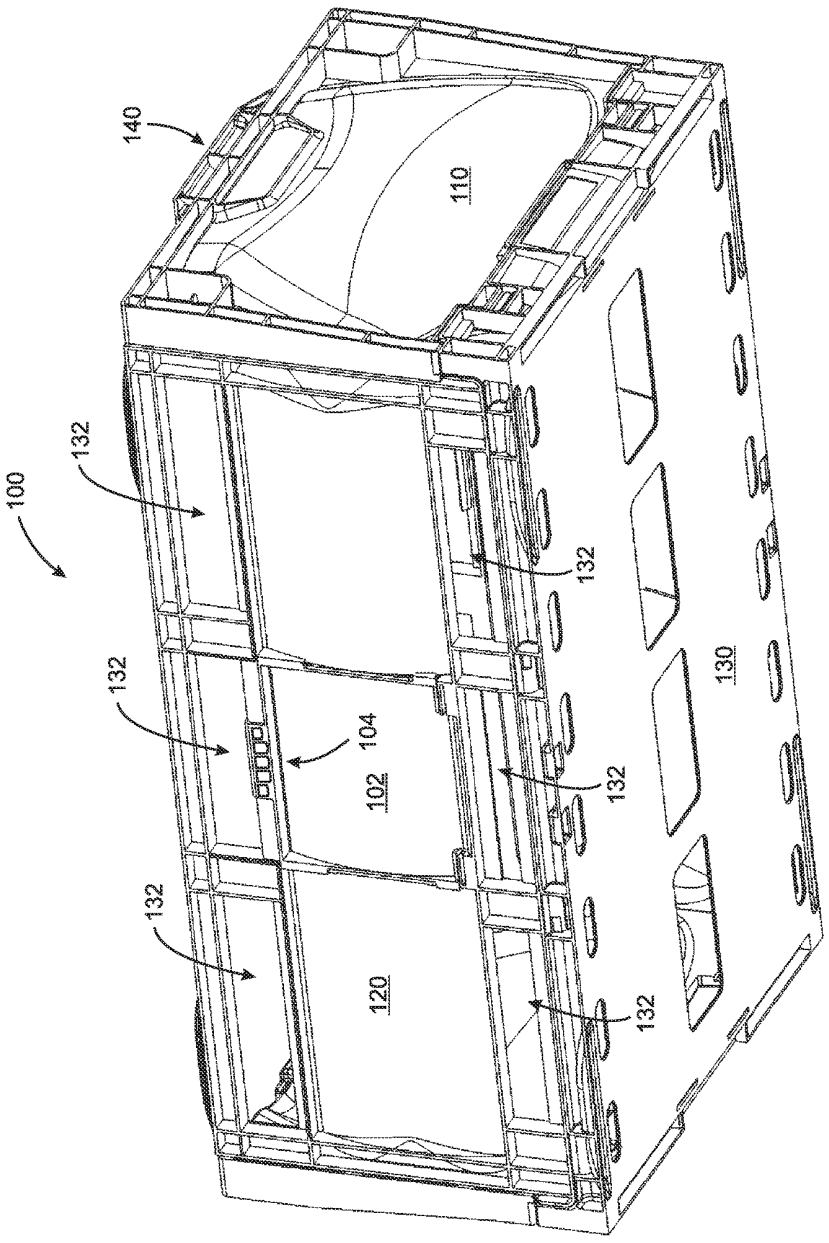


Fig. 2

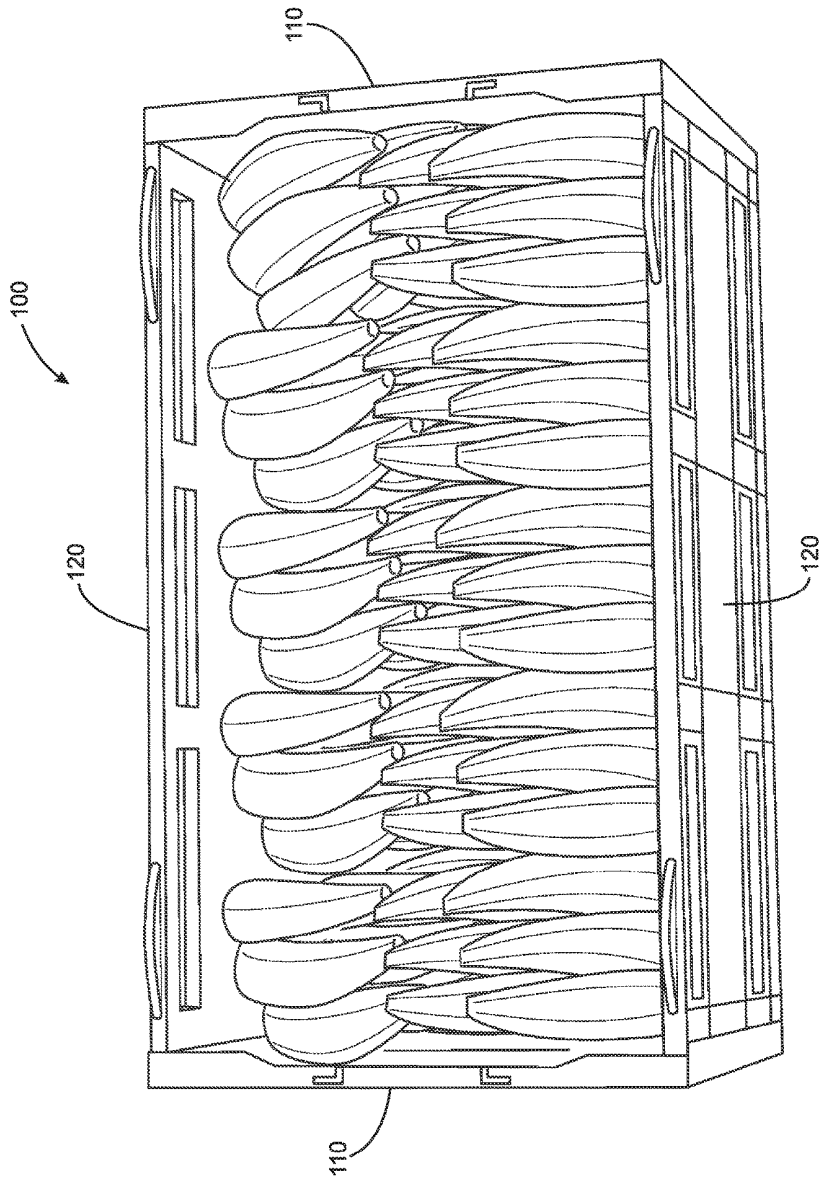


Fig. 3

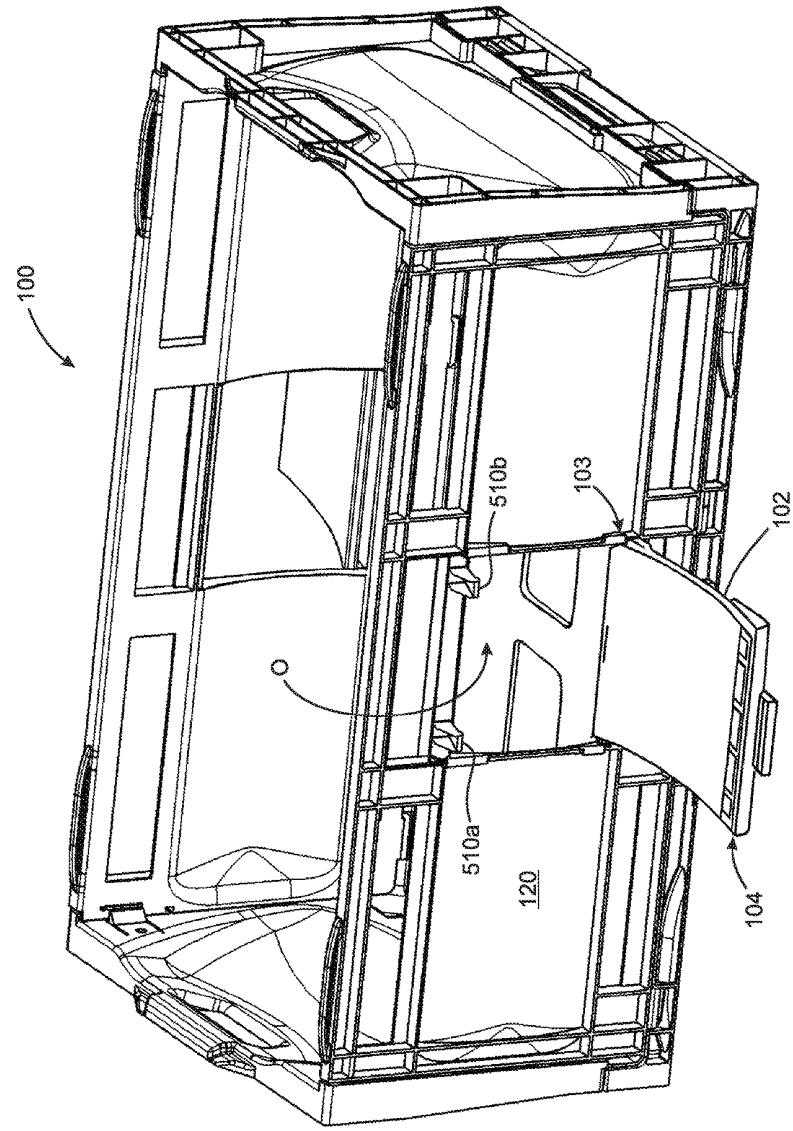
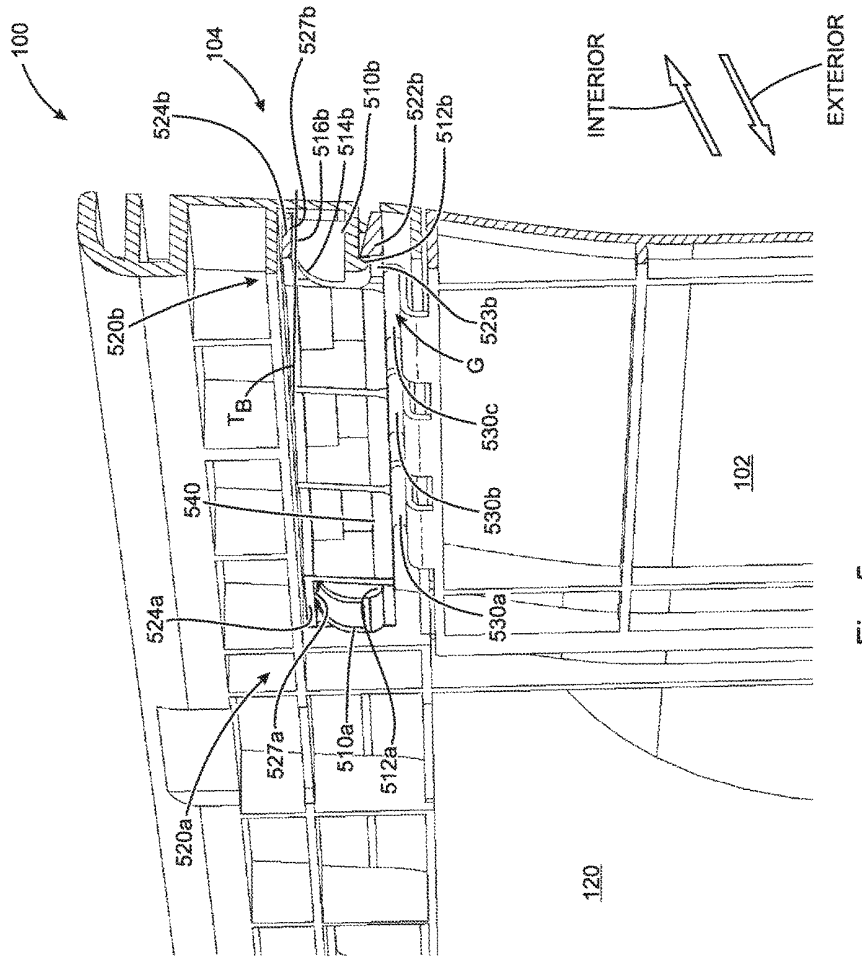


Fig. 4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104
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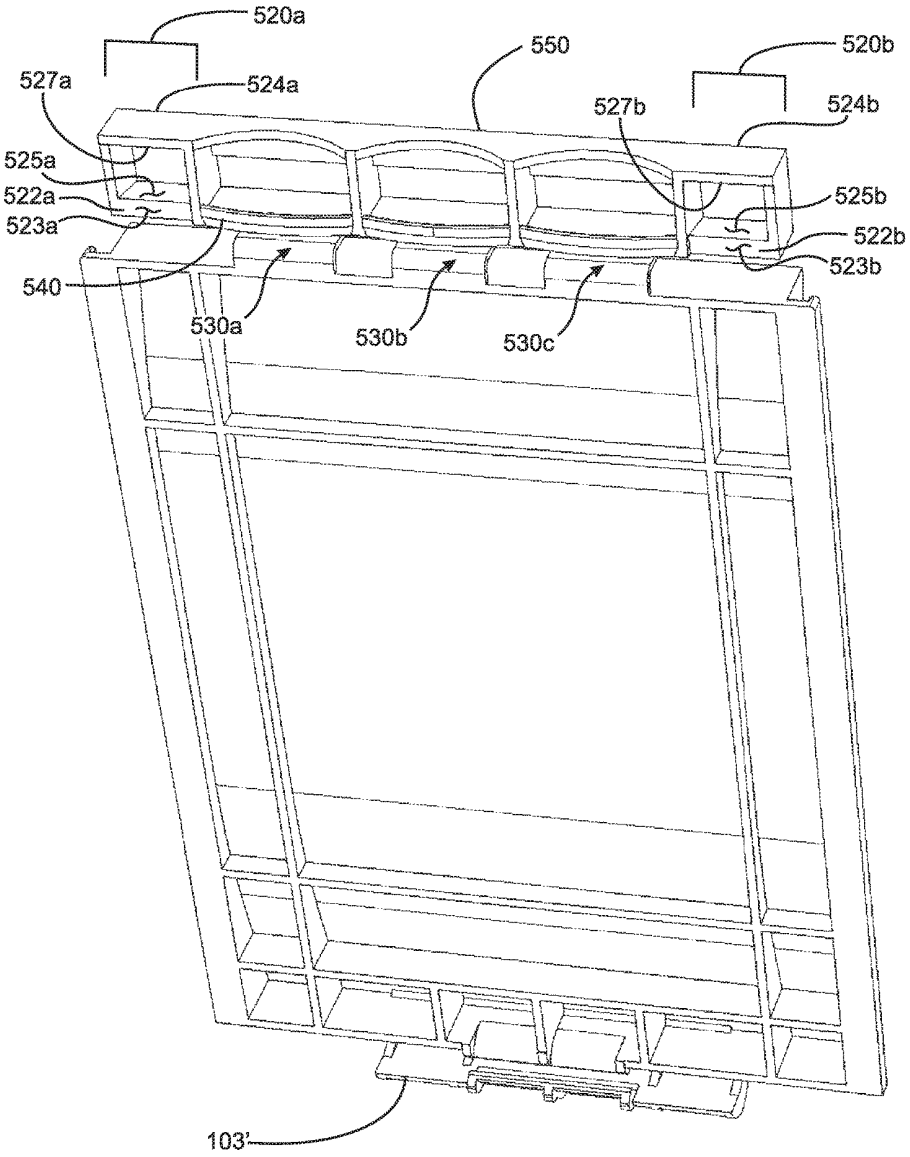
524b
516b
514b
510b
522b
512b
INTERIOR
EXTERIOR
520b
523b
G
T_B
530c
540
530b
102
524a
530a
527a
510a
512a
520a
120

Fig. 5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530c
103'

Fig. 6

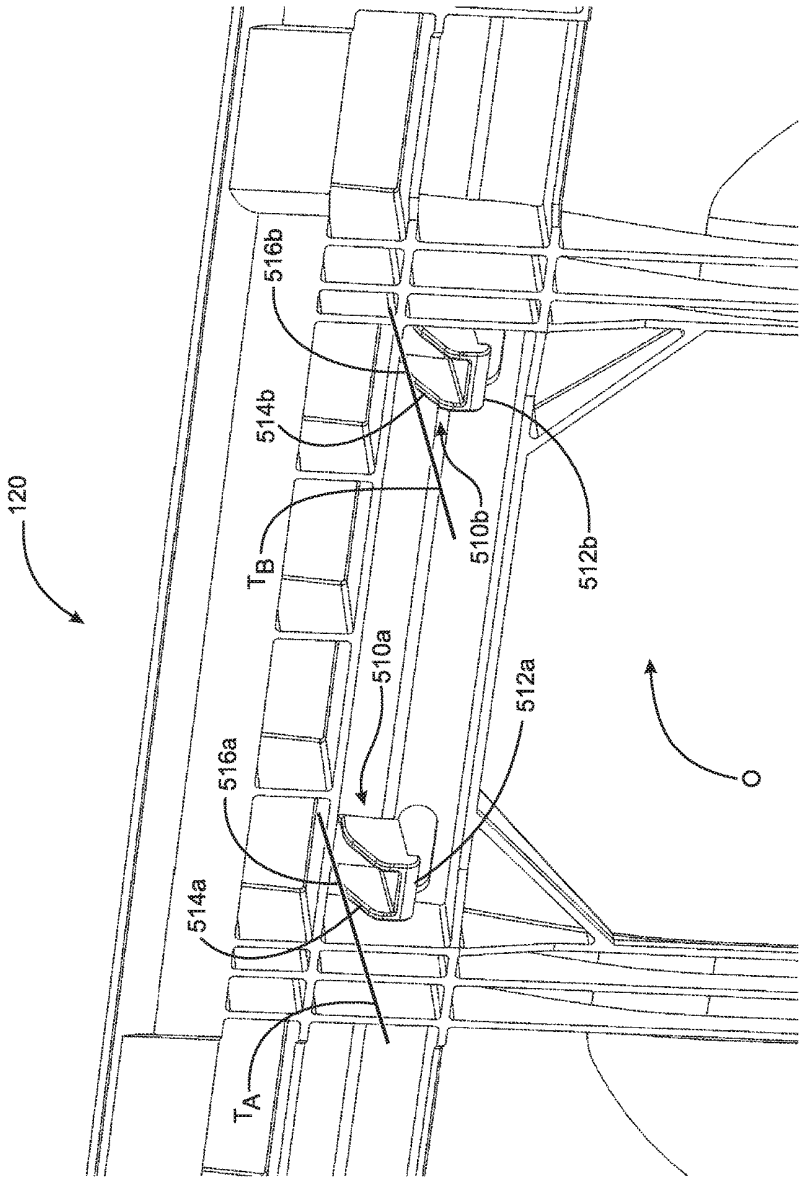

Fig. 7

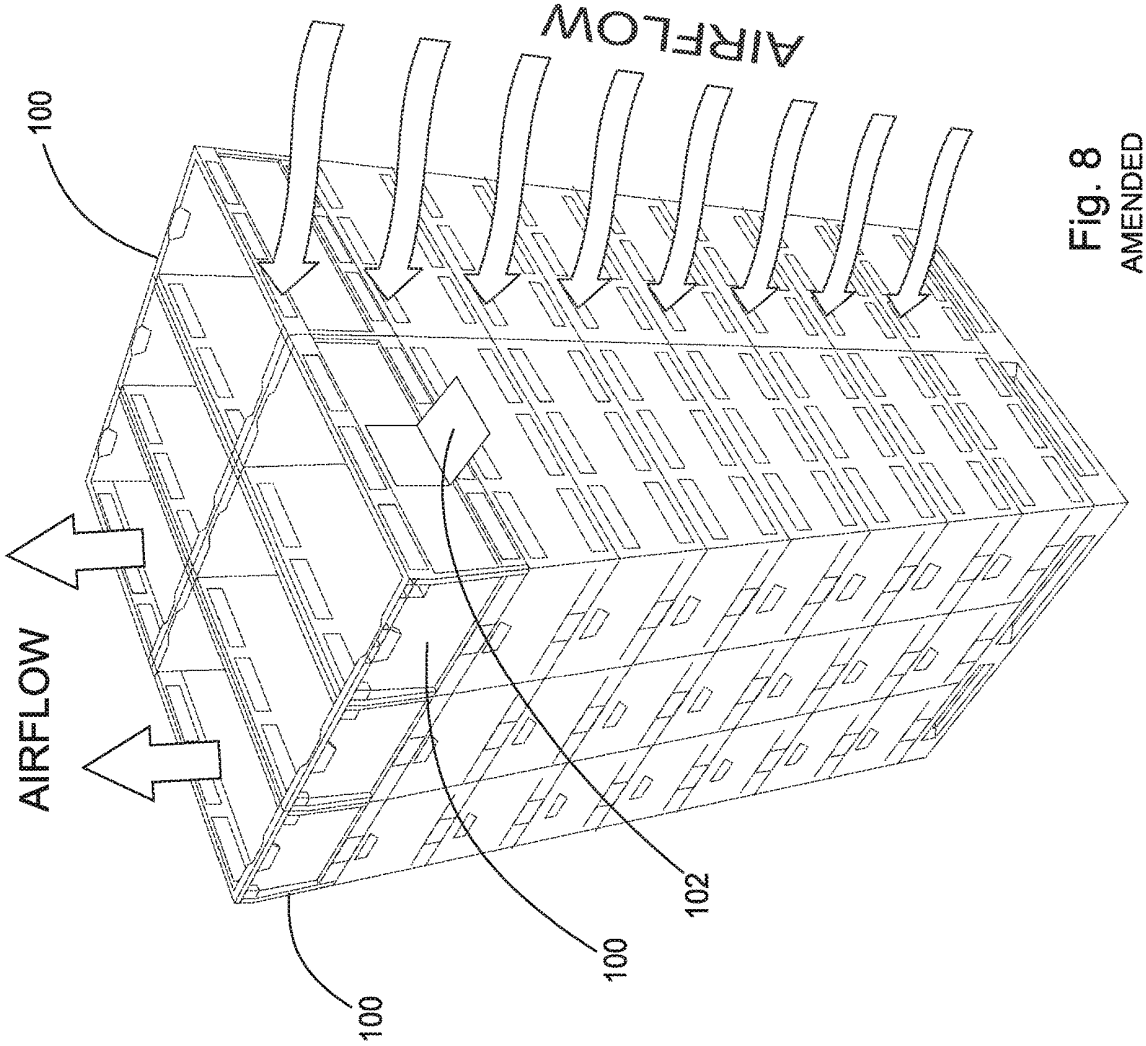

Fig. 8
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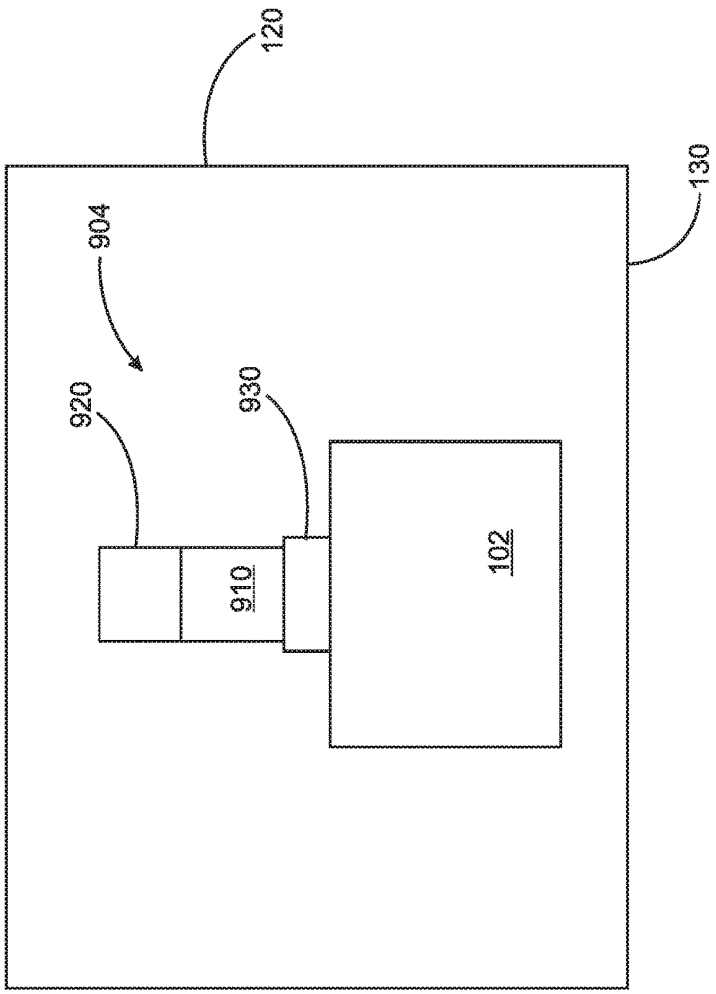

Fig. 9

PRODUCE SHIPPING CONTAINER

Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue; a claim printed with strikethrough indicates that the claim was canceled, disclaimed, or held invalid by a prior post-patent action or proceeding.

RELATED APPLICATION

The present application claims the benefit of U.S. Provisional Application No. 62/387,285 filed on Dec. 23, 2015 having a title PRODUCE SHIPPING CONTAINER under 35 U.S.C. § 119(e), the substance of said application is hereby incorporated by reference in its entirety.

FIELD OF THE INVENTION

Produce shipping containers, especially containers for shipping bananas.

BACKGROUND OF THE INVENTION

Bananas are harvested from trees in tropical growing regions such as Central and South America. Export bananas are picked green, shipped to distribution centers in destination countries, and delivered to retail stores in a state of ripeness appropriate for retail sale. Growers conventionally pack bananas in covered, corrugated cardboard boxes containing about 40 pounds of bananas per box. Filled boxes are placed on pallets in eight layers, each layer including 5 or 6 boxes. Bananas are refrigerated to between 13.5° and 15° C. (56.3 and 59.0° F.) during transport to suspend the ripening process ("put the bananas to sleep"). This allows bananas to reach grocery stores without being overripe.

Pallets of cooled ("sleeping") bananas are loaded onto ships for transport from growing regions to consuming regions. Temperature continues to be controlled throughout shipment to distribution centers in the consuming regions. Acceptance testing usually occurs at the distribution center. Upon arrival, bananas on a given pallet are inspected to determine if the shipment will be accepted or rejected. A typical inspection involves sampling bananas in 3-4 boxes on each pallet. The bananas are selected at different layers and sides of the 30-48 box arrangement to determine the quality of bananas and their state of ripeness. When shipping in corrugated boxes, a hole must be cut in the selected boxes with a knife. One or more bananas are removed through the hole and inspected. Attributes tested include physical appearance, size, sweetness, and temperature.

Accepted pallets of bananas are moved to a ripening room. There the temperature of the bananas is raised and the bananas are exposed to ethylene gas to restart the ripening process ("waken the bananas"). The ripening process continues in the ripening room for about 3-5 days. After sufficient ripening, the pallets are loaded onto a truck at the distribution center for delivery to retail stores. Temperature continues to be controlled. To lengthen shelf life at the stores, boxes are de-stacked from each pallet, box covers are removed, and the uncovered boxes are reloaded onto the pallet in a cross-stacked arrangement (each box has its length extending in a direction perpendicular to the length of the box on which it is located). Cross-stacking provides better airflow over the bananas, minimizing over-ripening by allowing better release of heat and ethylene gas generated during ripening.

The current transport process for bananas has several disadvantages. During the inspection process, the cutting of containers may result in direct damage to the bananas from the cutting implement as a container is cut, and indirect damage to the bananas may result from structural weakness cause by the cutting of the boxes, which may result in the crushing of bananas during transportation. Also, manipulation of boxes at the retail store to achieve the cross-stacked arrangement is labor intensive.

While plastic containers as an alternative to corrugated cardboard boxes have been produced, they have had some, although limited commercial success for transporting of bananas. They have been relatively heavy and had rigid construction. One proposed plastic container, described in published PCT Application WO2015134067, has a light weight construction giving the box a relatively high flexibility similar to corrugated cardboard which is desirable in many applications.

There remains a need for a plastic container having an access door that is easily opened to facilitate the inspection process and to facilitate the release of heat and ethylene gas that is generated during the ripening process. The box should also provide access to the contents of the container without compromising the structural integrity of the box when the box is subjected to the substantial forces resulting from the stacking and transportation of multiple layers of containers. For example, the contents of the container should not be damaged and the access door should not inadvertently open during transportation. Additionally, it is typically desirable that the opening mechanism and door should fit within the profile of the wall to facilitate manipulation of containers on a pallet and decrease the likelihood that the contents of the container will be damaged.

BRIEF SUMMARY OF THE INVENTION

A first aspect of the invention is directed to a produce container having an interior for maintaining produce. The container comprises a base, two endwalls and two sidewalls, each of the endwalls and sidewalls are coupled to the base, at least one of the sidewalls having a first projection and a second projection. Each projection extends transverse to an exterior surface of the at least one sidewall or endwall. Each projection comprises i) a hook and ii) an external surface opposite the hook including an external contact location having a tangent that is transverse to the wall, the hook extending in a direction away from the contact location, the contact location being disposed interiorly of the hook. The container further comprises a door movably coupled to the sidewall or endwall, the door movable from a closed position to an open position, and a latch coupled to the door by at least one spring at an end of the door. The latch comprises a first clasp and a second clasp. Each clasp comprises a catch and a binding arm connected to the catch and having a contact surface. For each clasp, the catch is separated from the contact surface by a distance so that a corresponding one the first projection and second projection fits between the catch and the contact surface when the door is in a closed position. The first clasp and the second clasp are separated from another along the end. The latch also comprises an actuation bar extending between the first clasp and the second clasp, and a bridge extending between the first clasp and the second clasp. The bridge is separated from the actuation bar. The latch has a locked position in which the

catches interface with their corresponding hooks to maintain the door in the closed position and prevents the external motion. The latch also has an unlocked position in which the door is externally movable from the closed position to the open position. The at least one spring is configured and positioned to bias the latch into the locked position, and configured such that sufficient pressure on the actuation bar (also referred to as a finger press) overcomes the biasing to move the catches to an unlocked position in which the catches do not interface with the corresponding hooks. In the unlocked position the catches are positioned to allow the door to externally rotate to attain the open position. When the latch is in the locked position, each of the contact surfaces faces or contacts its corresponding contact location, such that it contacts or is able to contact the corresponding location to inhibit an opening force on the door (such as a force on the interior of the door caused by the contents of the container) from moving the latch from the locked position to the unlocked position.

In some embodiments, each of the endwalls and sidewalls is coupled to the base by at least one hinge. In some embodiments, the access door is coupled to a sidewall. In some embodiments, the hooks extend downward. The access door may be coupled to the at least one of the endwalls and the sidewalls by at least one hinge, whereby the door is moved between the closed position and the open position by external rotation.

In some embodiments, the hinges are connected to a bottom end of the access door.

The contact locations may be substantially perpendicular to the at least one of the sidewalls and the endwalls.

For example, the actuation bar and the bridge may be separated from one another by about 2 mm to 2 cm.

The container may constitute one container in an arrangement of containers on a pallet. The container may be in a combination with a plurality of other containers to form an arrangement on a pallet.

The arrangement may be a multilayer 6-down arrangement.

Another aspect of the invention is directed to a produce container having an interior for maintaining produce. The container comprises a base, two endwalls and two sidewalls. Each endwall and sidewall is coupled to the base. At least one of the endwalls or sidewalls has a projection extending transverse to an exterior surface of the at least one endwall or sidewall. The projection comprises i) a hook extending from a surface thereof and ii) an exterior surface opposite the hook including an external contact location having a tangent that is transverse to the at least one of the endwalls and sidewalls. The hook extends in a direction away from the contact surface. The contact location is disposed interiorly of the hook.

The container also comprises a door movably coupled to the at least one of the sidewalls or endwalls, the door movable from a closed position to an open position. The container also comprises a latch, coupled to the door by a spring. The latch comprises a catch and a binding arm. The binding arm is connected to the catch and has a contact surface. The contact surface is separated from the catch by a distance such that the projection fits between the catch and the contact surface when the door is in the closed position. The latch has a locked position in which the catch interfaces with the hook to maintain the door in the closed position, and an unlocked position in which the door is movable from the closed position to the open position. The spring biases the latch into the locked position when the door is in the closed position. Sufficient pressure on the latch overcomes the biasing to move the catch to an unlocked position in which it does not interface with the hook, thereby allowing the door to attain the open position. When the latch is in the locked position, the contact surface faces or contacts the contact location, such that it contacts or is able to contact the corresponding location to inhibit an opening force on the door (such as a force on the interior of the door caused by the contents of the container) from moving the latch from the locked position to the unlocked position.

As used herein, terms such as "down" and "downward" refer to a direction toward the base of a container, and the term "bottom" refers to the base side of the container. Terms such as "up" and "upward" refer to a direction away from the base of a container, and the term "top" refers to the side opposite the base.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING

The nature and mode of operation of the present invention will now be more fully described in the following detailed description of the invention taken with the accompanying drawing figures, in which:

FIG. **1** is a perspective view of an example of a reusable plastic container (RPC) having access doors and latches according to aspects of the present invention, the view taken from above the container;

FIG. **2** is a perspective view of an example of a RPC according to aspects of the present invention, the view taken from below the container;

FIG. **3** is a top view of the RPC of FIG. **1** filled with produce;

FIG. **4** is a perspective view of the container of FIG. **1** with an access door in an open position;

FIG. **5** is a cross section of a partial perspective view of the container of FIG. **1** with a cross section taken at line **5-5** having an access door in a closed position, showing further detail of the sidewall, access door and latch;

FIG. **6** is perspective view of an access door that has been removed from any walls of the container;

FIG. **7** is an expanded perspective view of a side wall of the container of FIG. **1** with the access door removed;

FIG. **8** is a perspective view of an arrangement of RPCs, each container being as shown in FIG. **1** with a representative one of the containers shown with its access door open, the door being open to enhance air flow to the interior of the container arrangement; and

FIG. **9** is a schematic side view of an example of a reusable plastic container (RPC) having an access door and a latch having a single clasp according to aspects of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

FIGS. **1** and **2** are perspective views of an example of a reusable plastic container **100** (also referred to herein as an RPC **100** or container **100**) having two access doors **102** (also referred to herein as doors **102**) and a latch **104** according to aspects of the present invention, the views are taken from above and below container **100**, respectively. Container **100** comprises two endwalls **110** and two sidewalls **120** which are coupled to a base **130**. Endwalls **110** and sidewalls **120** are collectively referred to herein as walls. The endwalls and sidewalls may be rigidly attached to base **130** or coupled to the base by one or more hinges **[**(not shown)**]***112*. Hinges *112* allow the walls of a box to attain an

erect state (as shown in FIG. **1**) in which the walls extend vertically from the base when the base is horizontally aligned, and the walls are locked in position to permit receipt of produce inside the container, and a collapsed state (not shown) in which the side walls are folded down on the base so as to be substantially parallel with the base and thereby form a more compact configuration which is useful, for example, during the return of empty RPCs. Handles **140** allow for easy movement of container **100** and any contents therein. A plurality of vents **132** in sidewalls **110** and/or endwalls **120** may be present to facilitate airflow to the interior of the container as described above. Although container **100** is shown as having an access door on both sidewalls **110**, according to aspects of the invention, at least one of the sidewalls **120** or endwalls **110** has an access door with a latch as described herein. Further details of the latch are provided below.

Containers may have a length and width (i.e., footprint) similar to any known banana container or any other suitable length and width to fit on a standard GMA pallet or other pallet suitable for shipping produce. Container **100** is molded from a plastic material, for example polypropylene. Suitable plastic materials include, but are not limited to, polyethylene, polypropylene, polyvinyl chloride, polyurethane, polyester, epoxy resin, phenolic resin, polystyrene, polycarbonate, combinations thereof and the like

FIG. **3** is a top view of RPC **100** of FIG. **1** filled with produce. For example the produce may be bananas, or other food which requires ripening while in a shipping container such as peaches. An RPC according to aspects of the present invention may hold bananas, other produce, or other food or non-food materials in the containers interior (i.e., in the space between the four walls **110**, **120** and base **130** (shown in FIG. **2**)).

FIG. **4** is a view of sidewall **120** of container **100** of FIG. **1** coupled to access door **102**, the door being in an open position. In the illustrated embodiment, access door **102** is coupled to a wall using one or more hinge **103**. In some embodiments, it is advantageous that the door open to form greater than a 90-degree angle with the wall on which is coupled (as measured to the interior surface of the door). In some embodiments, the angle with the wall is at least 135 degrees.

Container **100** with latch **104** will now be described further with reference to FIGS. **5-7**. FIG. **5** is a cross section of a partial perspective view of sidewall **120** of container **100** of FIG. **1** with a cross section taken at line **5-5** with access door **102** in a closed position, showing further detail of sidewall **120**, access door **102** and latch **104**. FIG. **5** includes a cross section taken through door **102** (at projection **510**b), latch **104** and side wall **120**. FIG. **6** is perspective view of access door **102** when it is removed from any walls of the container. FIG. **7** is an expanded perspective view of side wall **120** of the container of FIG. **1** with the access door removed.

As shown, sidewall **120** has a first projection **510**a and a second projection **510**. Each projection extends transverse to an exterior surface of sidewall **120**. Each projection **510**a, **510**b comprises a hook **512**a, **512**b and an external surface **514**a, **514**b opposite hooks **512**a and **512**b, respectively. External surfaces **514**a, **514**b include an external contact location **516**a and **516**b, respectively. Contact location **516**a and **516**b are disposed interiorly of [hook **511**a and **511**b] *hooks 512a and 512b*, respectively. Hooks **512**a and **512**b extend in a direction away from contact [surfaces] *locations* **516**a and **516**b, respectively. Contact locations **516**a and **516**b have a tangent T_a, T_b, respectively, that is transverse to the wall. In the illustrated embodiment, [hook **512** extends] *hooks 512a and 512b extend* downward from a bottom surface of [the] *a corresponding* projection *510a, 510b*, and external [surface **514**] *surfaces 514a and 514b* and contact [location **516**] *locations 516a and 516b* are on a top surface of [the] *a corresponding* projection *510a, 510b.*

Door **102** is movably coupled to wall **120**, door **102** being movable from a closed position (shown in FIG. **1**) to an open position (shown in FIG. **4**). In the closed position, the door contacts wall **120** around its perimeter to maintain any contents in the container and access to the interior of the container through the wall is prevented. In the open position, access to the inside of the container is permitted though the opening O in the sidewall **120** (e.g., to permit sampling or to facilitate air flow to or from the interior of the container).

In the illustrated embodiment, movable coupling is achieved by hinges **103** which permit external rotation of door **102** from the closed position to the open position. However latch **104** as disclosed herein may be used with other doors that move from a closed position to an open position using other types of movement such as external translation.

Also, although in the illustrated embodiment, hinges **103** are shown on the bottom of the door, the hinge may be located on a top or a side of the door. Although a door is shown as located on a sidewall **120**, a door may alternatively (or additionally) be located on an endwall **110**. Hinge component **103'** is disposed at the bottom end of door **102**.

Latch **104** comprises a first clasp **520**a and a second clasp **520**b. As described in greater detail below, each clasp interacts with a corresponding one of projections **510**a, **510**b to inhibit exterior motion of door **102** to maintain the door in a closed position. In the illustrated embodiment, two clasps and two corresponding projections **510**a, **510**b are used to maintain the door in a closed position. However, according to aspects of the present invention, one or more clasps may be present. The projections **510**a, **510**b are located at an opposite side of opening O from the hinges **103**.

In embodiments where more than one clasp is present, first clasp **520**a and second clasp **520**b are separated from another. It will be appreciated that such a configuration inhibits angular motion of door **102** (such that the left or right sides of the door can become separated from wall **120**) from forces such as would occur due to internal pressure being applied to the door by contents in the container. In some embodiments, it is advantageous that clasps **520**a and **520**b be located at the lateral extents of the door.

Each clasp comprises a catch **522**a, **522**b and a binding arm **524**a, **524**b. Each catch has an interface surface **523**a, **523**b.

Latch **104** is coupled to the door by one or more springs **530**a, **530**b, **530**c (collectively referred to as spring **530**; illustrated in the embodiment as bent cantilever springs each positioned to form a gap G between the top of the body of the spring and the bottom of actuation bar **540**). Spring **530** biases catches **522**a and **522**b into a locked position. Although the springs are illustrated as cantilever springs, any suitable spring construction (e.g., a coil spring) capable of biasing the catches in the manner described herein may be used.

In the locked position, each of the interface surfaces **523**a, **523**b (on catches **522**a, **522**b) interfaces with its corresponding hook **512**a, **512**b to maintain door **102** in the closed position and prevents the external motion of door **102**. In the illustrated embodiment, each catch is tapered such that the vertical thickness of the catch on the interior side of the

catch is less than the vertical thickness of the catch on the exterior side of the catch (i.e., the catches are thickest at interface surface **523**a, **523**b) to form a ramped surface **525**a, **525**b. The ramped surfaces facilitate movement of the hooks **512**a and **512**b to a position where they contact interface surfaces **523**a and **523**b, respectively, as door **102** is closed to attain the locked position. It is to be appreciated that, prior to application of an opening force on the door, a gap may exist between one of the interface surfaces **523**a, **523**b and the corresponding hook, such that only upon application of the opening force, the interface surface and the hook contact one another to inhibit opening of the door.

An actuation bar **540** extends between and is connected to first clasp **520**a and second clasp **520**b. Typically, the actuation bar is beam-shaped, but may have some curve or contour such as contour to facilitate locating of fingers on the bar. The force on actuation bar **540** overcomes the biasing of the spring(s) **530** and causes flexure of the plastic clasps to move interface surfaces **523**a, **523**b of catches **522**a, **522**b out of the their interfacing position with corresponding hooks **512**a and **512**b. Accordingly, latch **104** is moved to an unlocked position in which door **102** is externally movable from its closed position to its open position.

In the illustrated embodiment, unlocking of latch **104** is achieved by compressing spring(s) **530** (such that gap G is reduced and the spring is flexed) by pressing actuation bar **540** in a downward direction. However in other embodiments (not shown), hooks **512**a and **512**b extend upward from a top surface of a projection instead of downward, and the external surface and contact location are on a bottom surface of the projection. It will be appreciated that in embodiments where the hook is on top and the contact location are on the bottom, unlocking of the latch will be achieved by stretching the spring as a result of pressing the actuation bar in an upward direction.

Binding arms **524**a and **524**b have corresponding contact surfaces **527**a and **527**b. The binding arm of each clasp is connected to the catch **522**a, **522**b of its corresponding clasp, such that contact surfaces **527**a and **527**b are separated from their corresponding catch **522**a, **522**b by a distance to permit a corresponding one of first projection **510**a and second projection **510**b to fit between the catch and the contact surface. The projections are positioned relative to the clasps such that, after the hook of a projection is moved past the catch, the spring **530** biases the catch toward the projection, as described above, to achieve the locked position.

When latch **104** is in the locked position, each contact surface **527**a, **527**b of the binding arm contacts its corresponding contact location **516**a, **516**b to inhibit an opening force on the door from moving latch **104** from the locked position to the unlocked position. It will be appreciated that an opening force on the door (e.g., a force on the interior of the door caused by the contents of the container) results in catches **[525**a, **525**b**]** *522a, 522b* being pivoted and moved away from the projections which tends to move catches **[525**a and **525**b**]** *522a and 522b* out of interface with hooks **523**a and **523**b. Contact locations **516**a and **516**b of projection **[511**a and **511**b**]** *510a and 510b* press against contact surfaces **527**a and **527**b of binding arm, respectively, to inhibit pivoting of the catches and movement of the catches away from the projections and thereby inhibit force from the interior of the container from unlocking the latch and opening the door. It is to be appreciated that, prior to application of the opening force on the door, the contact surface and contact location face one another (as shown in FIG. **5**) and a gap may exist between the contact surface and the contact location, such that upon application of the opening force, the contact surface and the contact location make contact to inhibit unlocking.

As illustrated, each projection **510**a, **510**b is tapered such it become thinner in the exterior direction. As a result, each projection's external surface **514**a and **514**b only contacts its corresponding binding arm **524**a and **524**b across a portion of the external surface **514**a, **514**b. Such a configuration facilitates rotation of latch **104** when moving between the locked position to the unlocked position.

In the illustrated embodiment, projections **510**a and **510**b are illustrated as extending perpendicular to external surface of wall **120**, respectively, and the tangents T_A and T_B of the contact location **516**a and **516**b being perpendicular to sidewall **120**; however other non-perpendicular orientations of the projections and tangents are possible provided hooks **512**a and **512**b operate in a manner to inhibit external motion of catch **525** (and as a result inhibit external motion of door **102**), and contact locations **516**a and **516**b inhibit force from the interior of the container from unlocking the latch and opening the door, as described below. In some embodiments, the projections extend generally parallel to or in a same direction as the base or a flat surface on which the base may be located.

It will be appreciated that the inhibition of unintentional unlocking due to pressure on the interior surface of door **102** is believed to be achieved by force of the binding arm which results, in part, from friction occurring between contact locations **516**a and **516**b, and the contacts surface **527**a and **527**b, respectively and, in part, from the binding arm applying a force on the projection to prevent the hook from moving with the catch in response to a force from the interior of the door.

As described above, in some embodiments, the contact locations are perpendicular to sidewall. However, deviation from such a configuration is permitted. The amount of deviation is dependent, at least in part, on the relative positioning of the binding arm and the projection as well as the coefficient of friction between the contact location and the contact surface.

A bridge **550** extends between first clasp **520**a and second clasp **520**b. Bridge **550** is disposed above and separated from actuation bar **540**. Bridge **[540]** *550* adds robustness to latch **104** such that, when actuation bar **540** is pressed, the clasp (including binding arm **524**a, **524**b) is rotated such that the open position of the latch is more reliably achieved. As illustrated, in some embodiments, bridge **550** is connected to both binding arms **524**a, **524**b. Typically, the bridge is beam shaped, but may have some curve or contour. In some embodiments, the bridge is separated from the actuation bar to allow an operator of the latch to fit his/her fingers between the bridge and actuation bar. Alternatively, the separation may be smaller to allow actuation tool to fit between the bridge and actuation bar. In some embodiments the separation is between about 1 cm to 2 cm, in other embodiments the separation is between 2 mm to 2 cm.

It is to be appreciated that, in hand-operated use, the latch configuration permits access door opening using a single hand. It is also to be appreciated that the latch configuration and its resistance to accidental opening makes it suited for a light weight, high flexibility plastic containers such as those described in Published PCT Application WO2015134067. For example, such containers weigh under 3 pounds and can hold 40 pounds of bananas.

FIG. **8** is a perspective view of an arrangement of RPCs, each container **100** being as shown in FIG. **1**. The arrangement is a 6-down configuration, 8-layer arrangement. The containers are coverless. In the illustrated embodiment,

according to aspects of the present invention, a representative one of the containers is shown with its access door **102** open, the door being open to enhance air flow to the interior of the container arrangement. It will be appreciated that opening the door facilitates the escape of heat and ethylene gas generated during the ripening process thus reducing the likelihood of overripening of the produce in the containers of the arrangement. In some embodiments, all of the doors facing the exterior of the arrangement are opened. In other embodiments, only a select few access doors are opened. For example the doors may be opened by an operator at a retail store. In some embodiments, the doors have latches according to aspects of the present. It will be appreciated that, the coverless containers and the open doors can substantially reduce the effort needed to enhance the airflow to the bananas in the containers over cross-stacking procedure used with corrugated cardboard boxes The one-hand operation of the latches facilitates the door opening process. While the opening of doors was discussed with reference to a pallet with 48 containers thereon, it will be appreciated that a pallet may be delivered to a retail store with fewer containers, and aspects of the present invention may be used with pallets having fewer containers.

FIG. **9** is a schematic side view of an example of a reusable plastic container (RPC) having an access door **102** and a latch **904** having a single clasp **920** according to aspects of the present invention. As with the embodiments described above, the container comprises two endwalls **110** (as shown in FIG. **2**), two sidewalls **120**, and a base **130**. However, the latch comprises a single clasp **920**. Accordingly there is only a single projection **910** extending transverse to an exterior surface of wall **120**. Latch **904** is coupled to the door by a spring **930**, the latch need only comprise a single catch. The single clasp has a construction and operation similar to that described above (with reference to FIGS. **5-7**). It will be appreciated that an actuation bar and a bridge are not needed. Actuation of the clasp can occur by direct contact with the clasp. Alternatively an actuation bar may be coupled to the clasp to facilitate movement of the single clasp to an unlocked state.

What is claimed is:

1. A produce container having an interior for maintaining produce, comprising:

A) a base, two endwalls and two sidewalls, each of the endwalls and sidewalls being coupled to the base, at least one of the sidewalls *or endwalls* having a first projection and a second projection, each projection extending transverse to an exterior surface of the at least one **[**sidewall**]** *of the sidewalls* or **[**endwall**]** *endwalls*, each projection comprising

i) a hook and

ii) an external surface opposite the hook including an external contact location having a tangent that is transverse to the **[**wall**]** *at least one of the sidewalls and the endwalls*, the hook extending in a direction away from the contact location, the contact location being disposed interiorly of the hook;

B) **[**a**]** *an access* door movably coupled to *the at least one of* the **[**sidewall**]** *sidewalls* or **[**endwall**]** *endwalls*, the *access* door movable from a closed position to an open position;

C) a latch coupled to the *access* door by at least one spring at an end of the door, the latch comprising

a) a first clasp and a second clasp, each comprising

i) a catch and

ii) a binding arm connected to the catch and having a contact surface, for each clasp **[**,**]** the catch being separated from the contact surface by a distance so that a corresponding one *of* the first projection and second projection fits between the catch and the contact surface when the door is in a closed position, the first clasp and the second clasp being separated from another along the end,

b) an actuation bar extending between the first clasp and the second clasp, and

c) a bridge extending between the first clasp and the second clasp, and separated from the actuation bar,

the latch having a locked position in which the catches interface with their corresponding hooks to maintain the door in the closed position and prevent **[**the**]** external motion *from the closed position to the open position*, and an unlocked position in which the door is externally movable from the closed position to the open position, the at least one spring biasing the latch into the locked position, and configured such that sufficient pressure on the actuation bar overcomes the biasing to move the catches to **[**an**]** *the* unlocked position in which the catches do not interface with the corresponding hooks, thereby allowing the door to externally rotate to attain the open position, when the latch is in the locked position, each of the contact surfaces facing its corresponding contact location.

2. The container of claim **1**, wherein each of the endwalls and sidewalls is coupled to the base by at least one hinge.

3. The container of claim **1**, wherein the access door is coupled to a sidewall.

4. The container of claim **1**, wherein the hooks extend downward.

5. The container of claim **1**, wherein the access door is coupled to the at least one of the endwalls and the sidewalls by at least one hinge, whereby the door is moved between the closed position and the open position by external rotation.

6. The container of claim **[**1**]***5*, wherein the **[**hinges are**]** *at least one hinge is* connected to a bottom end of the access door.

7. The container of claim **1**, wherein the contact locations are substantially perpendicular to the at least one of the sidewalls and the endwalls.

8. The container of claim **1**, wherein the actuation bar and the bridge are separated from one another by about 2 mm to *about* 2 cm.

9. The container of claim **1**, in a combination with a plurality of other containers to form an arrangement on a pallet.

10. The container of claim **[**1**]***9*, wherein the arrangement is a multilayer 6-down arrangement.

11. A produce container having an interior for maintaining produce, comprising:

A) a base, two endwalls and two sidewalls that are each coupled to the base, at least one of the endwalls and sidewalls having a projection extending transverse to an exterior surface of the at least one of the endwalls and sidewalls, the projection comprising

i) a hook extending from a surface thereof and

ii) an exterior surface opposite the hook including an external contact location having a tangent that is transverse to the at least one of the endwalls and sidewalls, the hook extending in a direction away from the contact **[**surface**]** *location*, the contact location being disposed interiorly of the hook;

B) a door movably coupled to the at least one of the sidewalls or endwalls, the door movable from a closed position to an open position;

C) a latch, coupled to the door by a spring, the latch comprising

i) a catch and

ii) a binding arm connected to the catch and having a contact surface, the contact surface separated from the catch by a distance such that the projection fits between the catch and the contact surface when the door is in the closed position,

the latch having a locked position in which the catch interfaces with the hook to maintain the door in the closed position, and an unlocked position in which the door is movable from the closed position to the open position,

the spring biasing the latch into the locked position when the door is in the closed position, and sufficient pressure on the latch overcoming the biasing to move the catch to [an] *the* unlocked position in which it does not interface with the hook, thereby allowing the door to attain the open position,

when the latch is in the locked position, the contact surface facing the contact location.

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