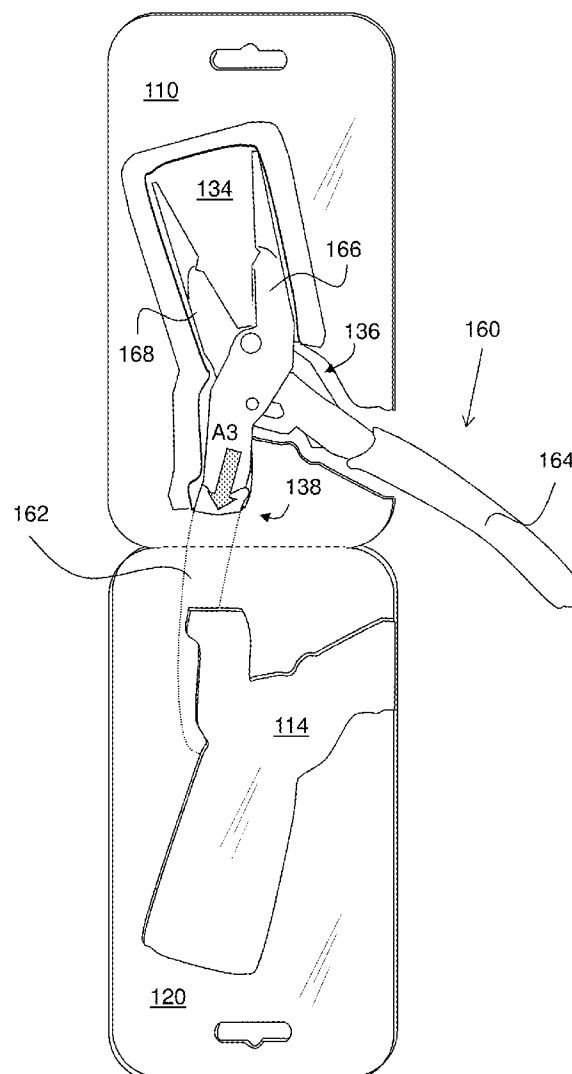


(43) **Pub. Date:** **Dec. 3, 2015**



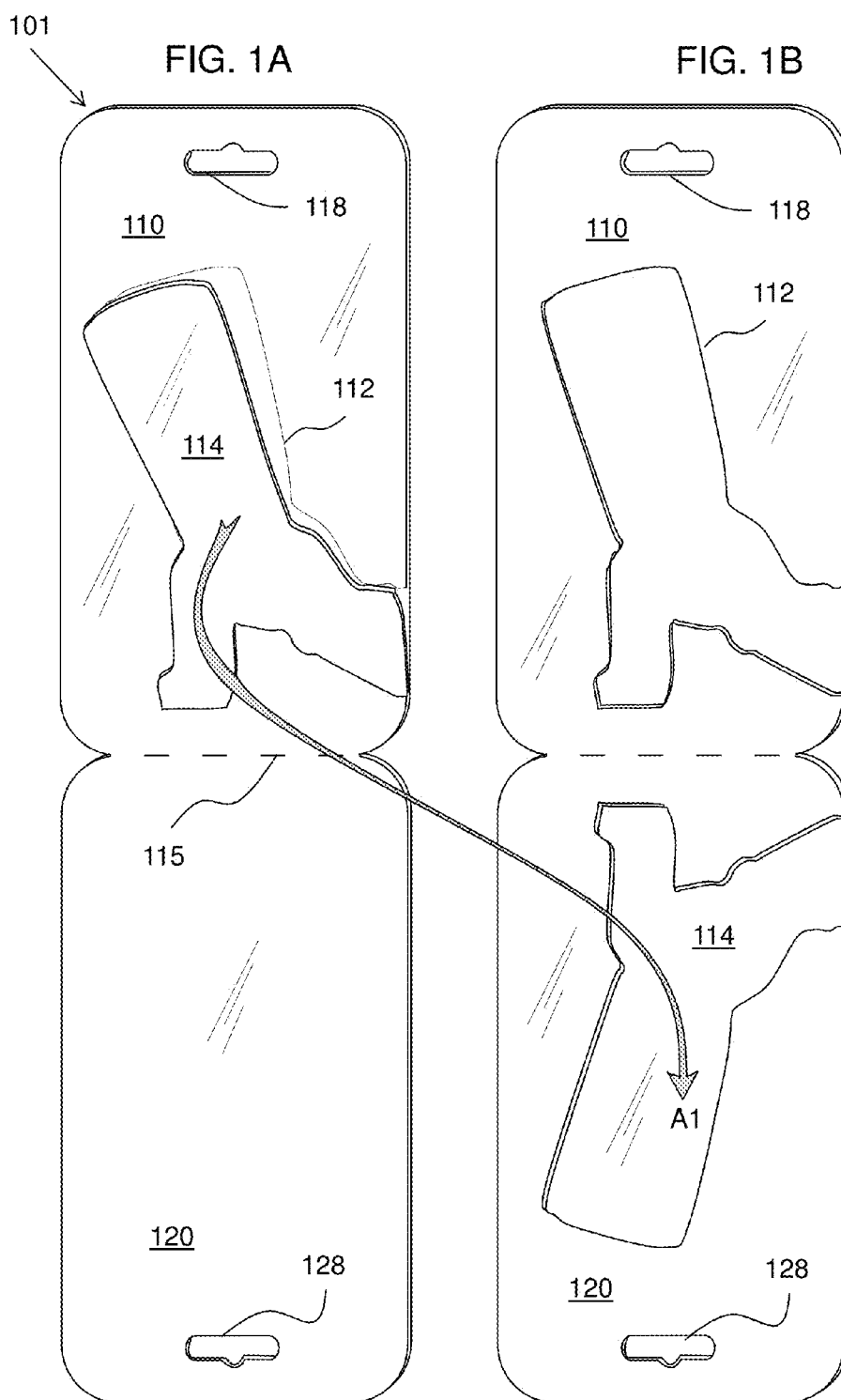


FIG. 2

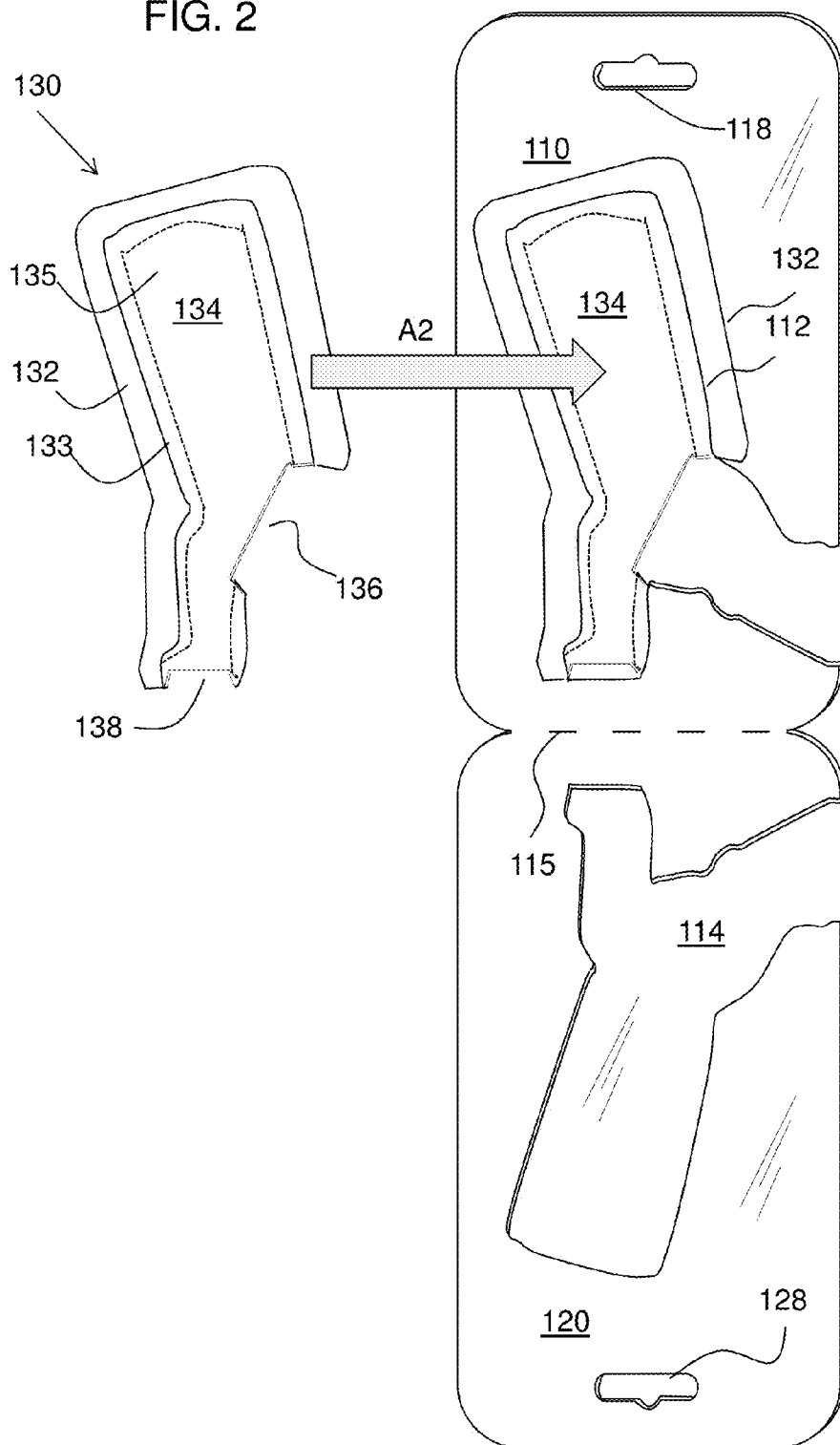
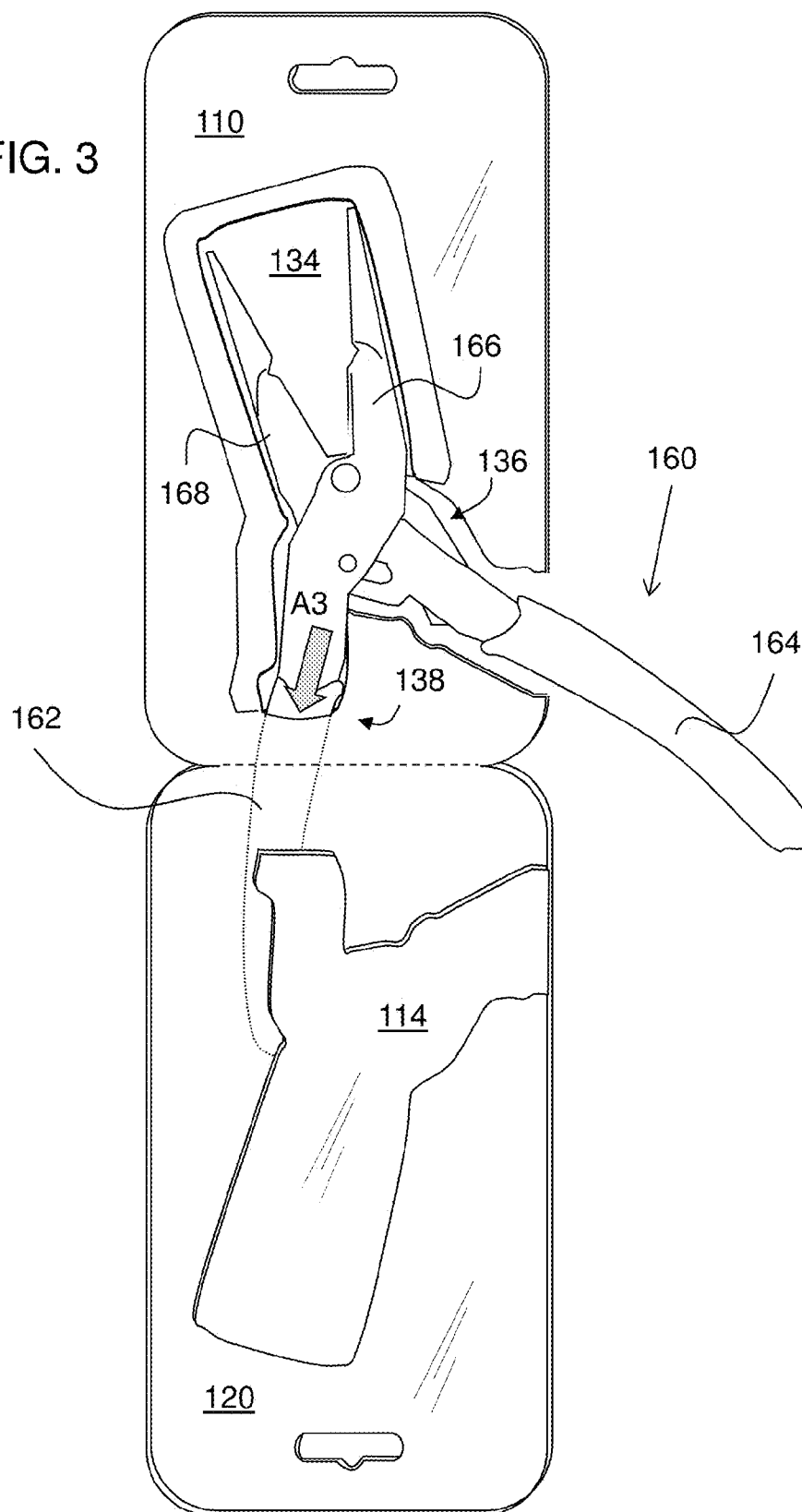


FIG. 3



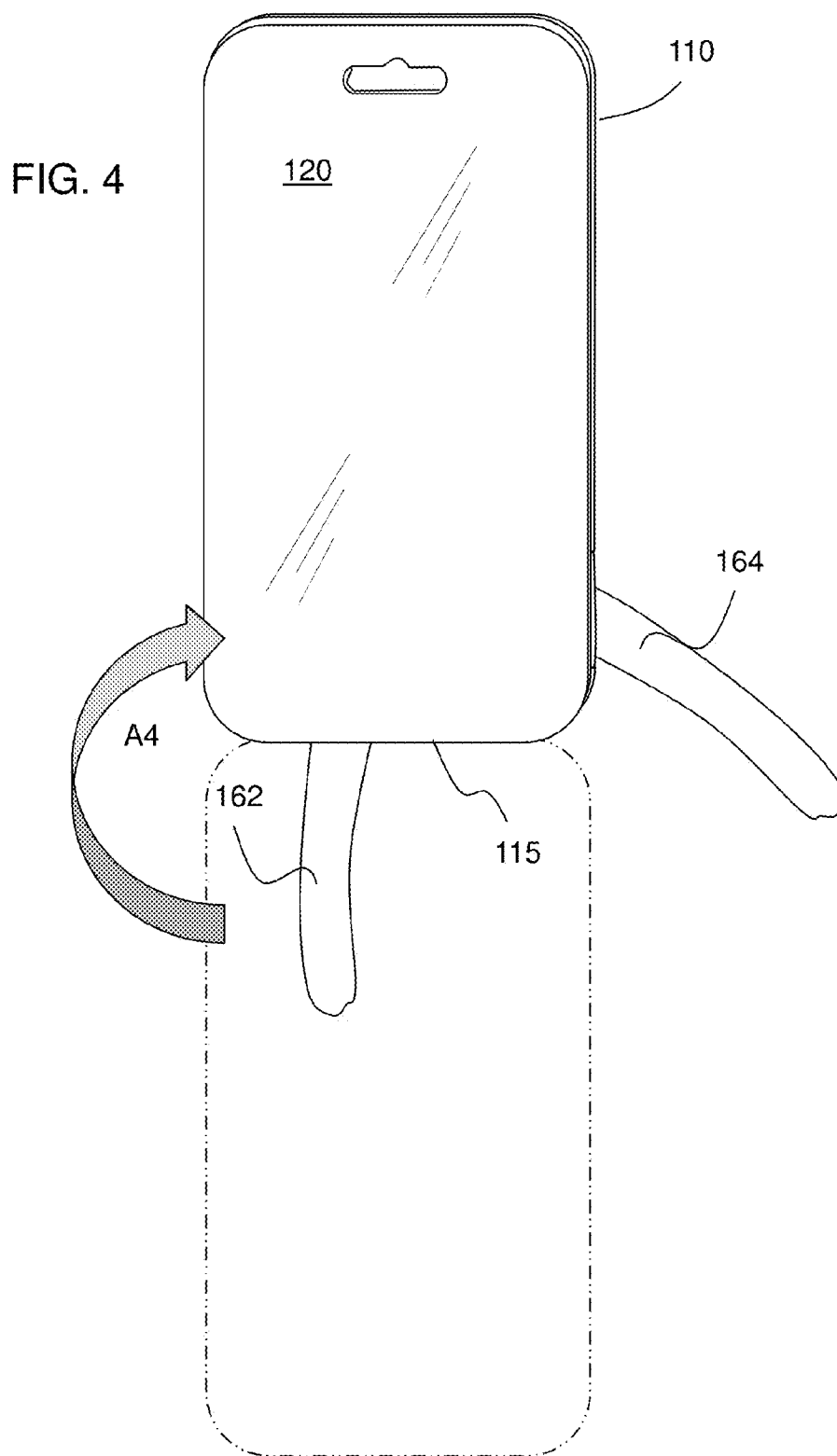


FIG. 5

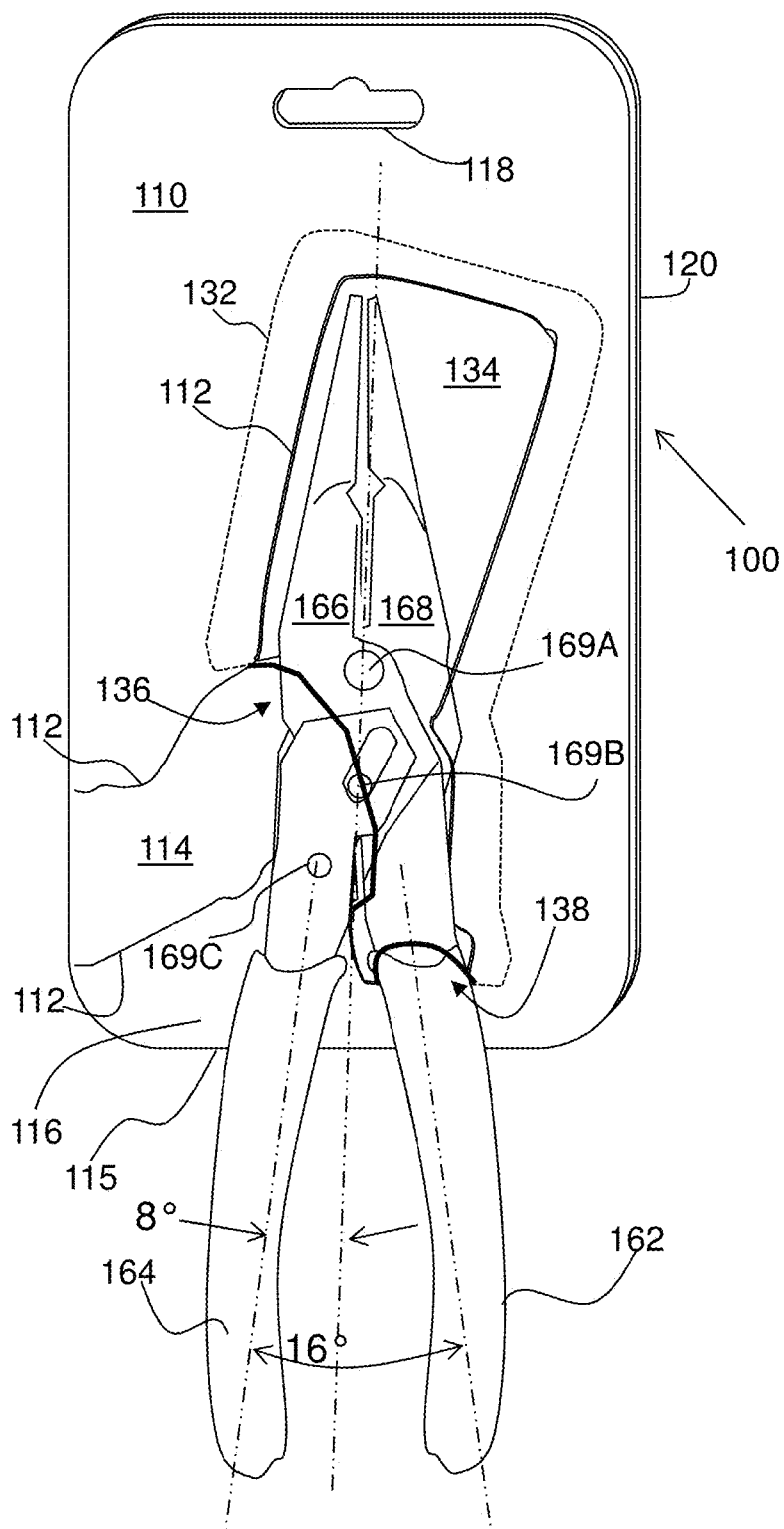




FIG. 7A

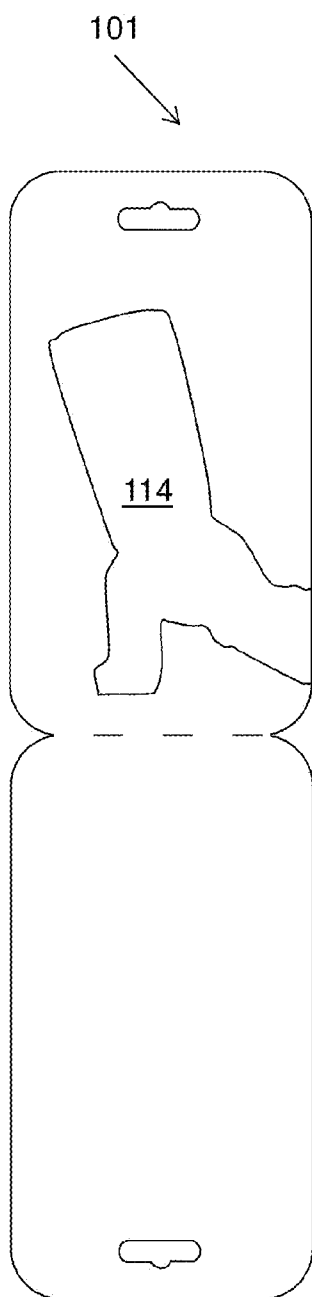


FIG. 7B

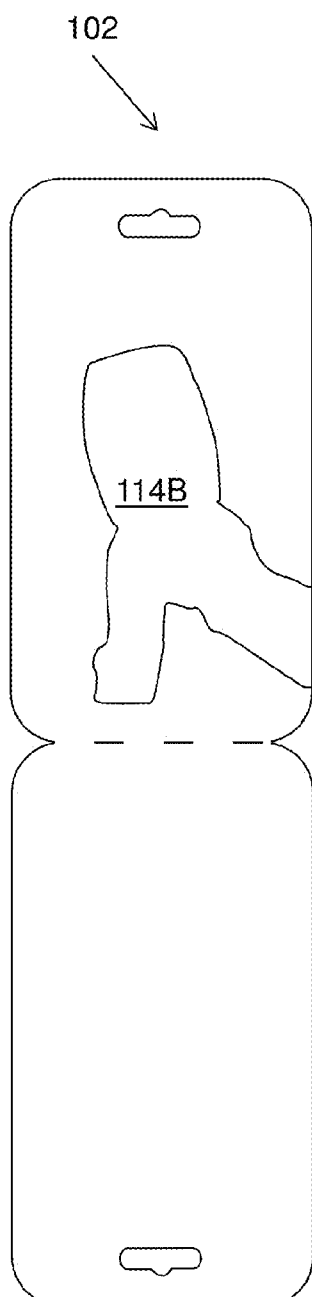


FIG. 7C

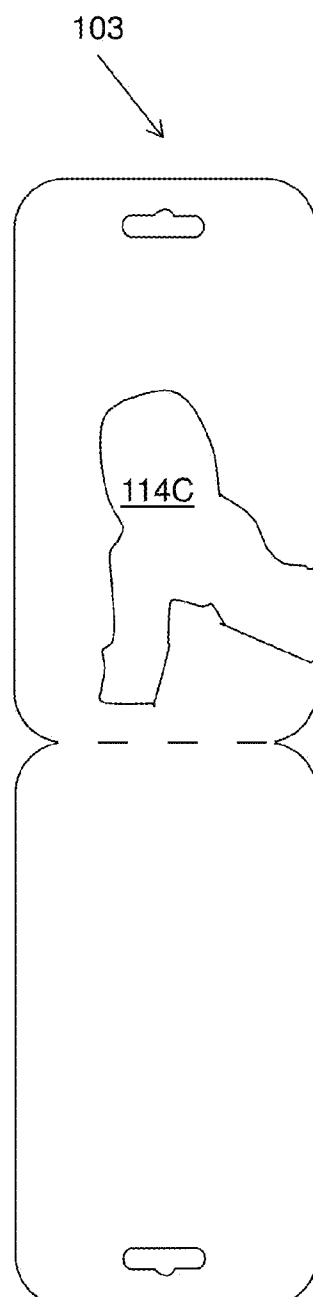


FIG. 8

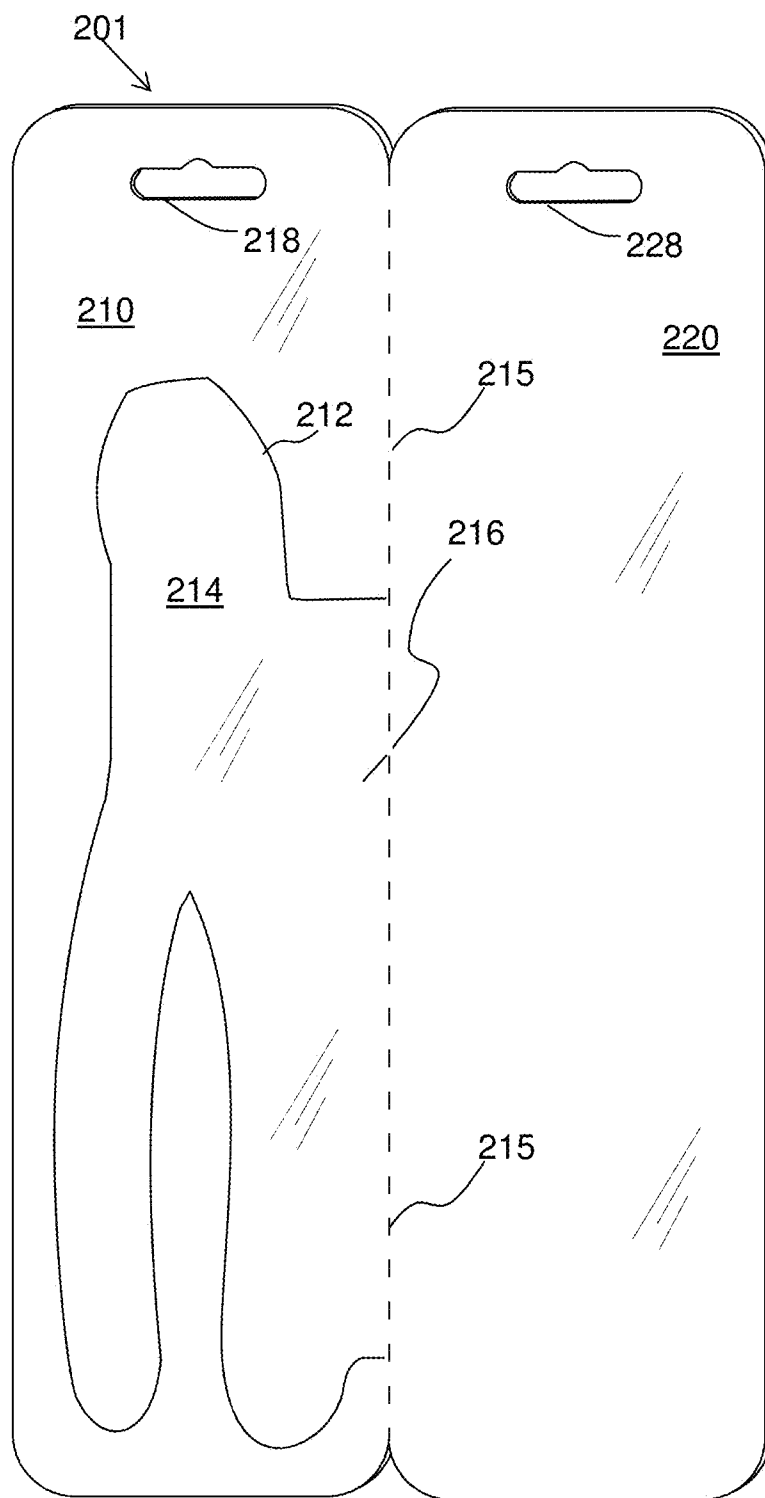


FIG. 9

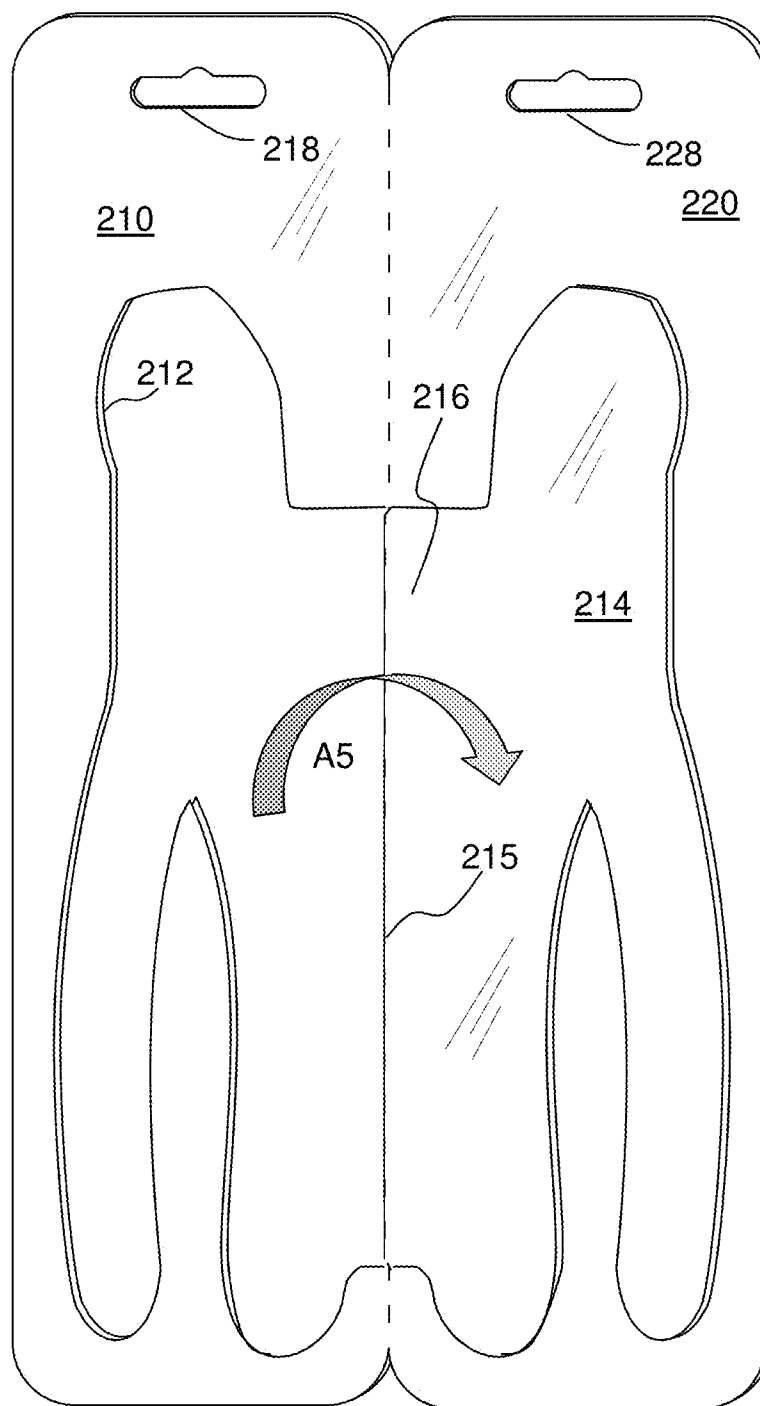


FIG. 10

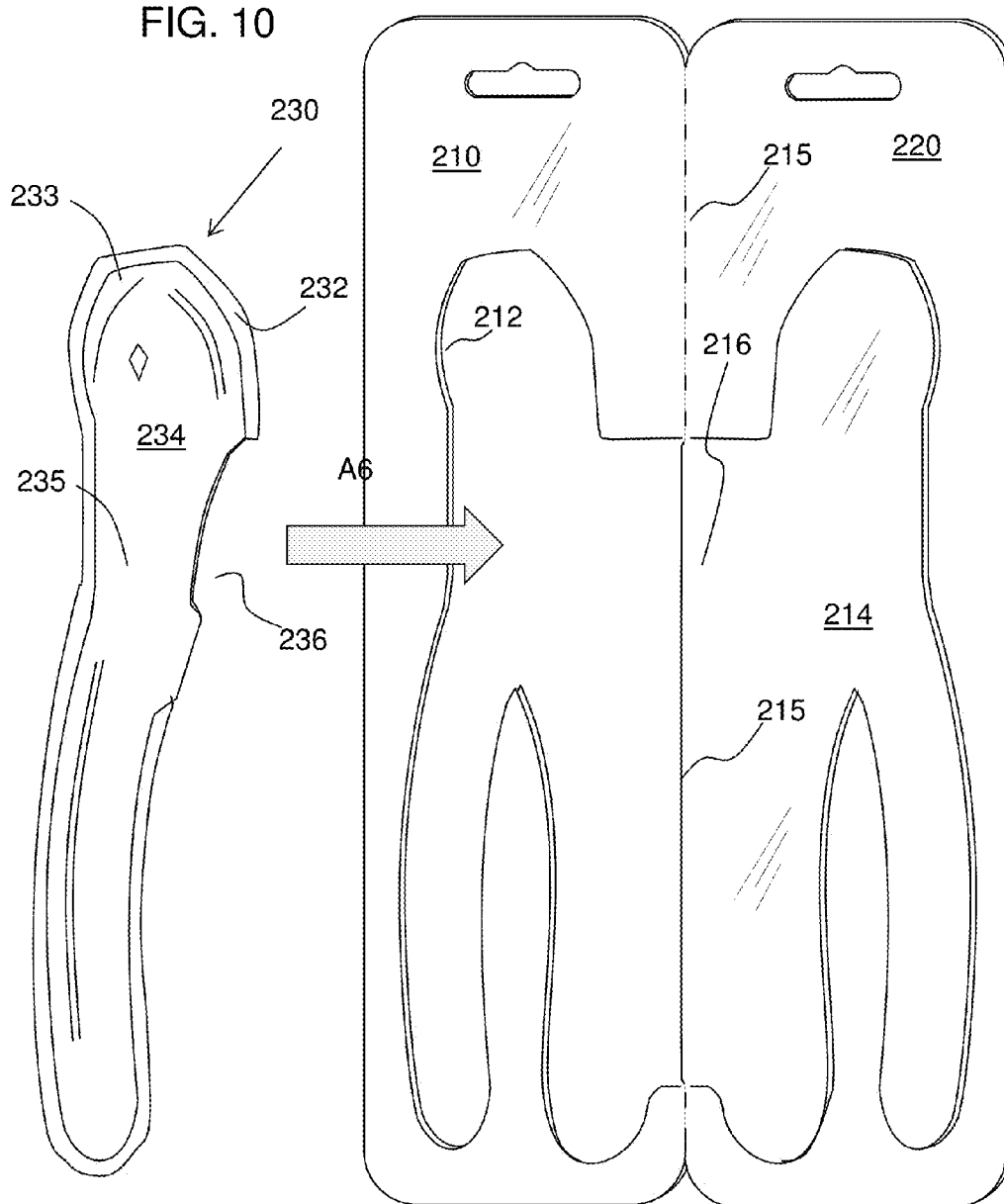


FIG. 11

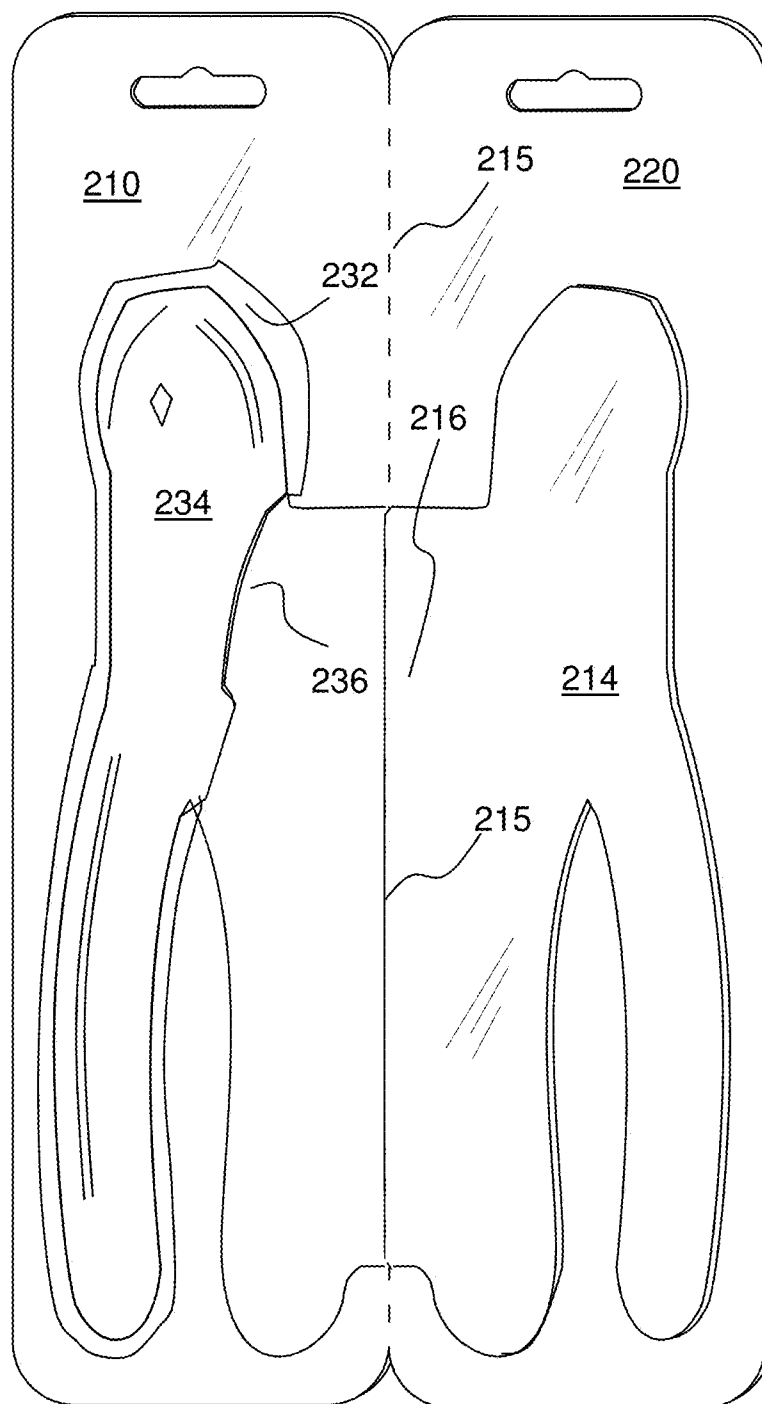


FIG. 12

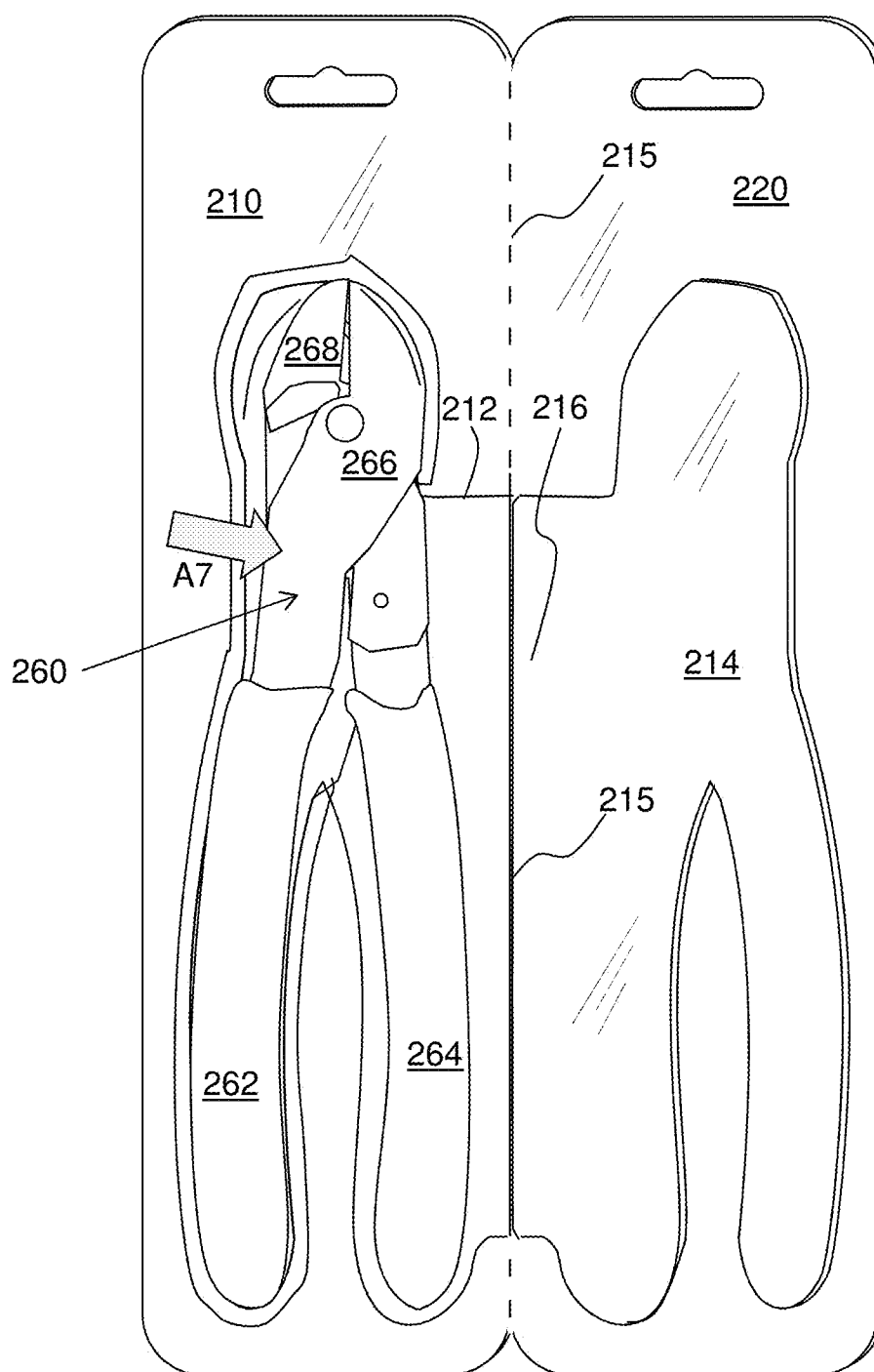
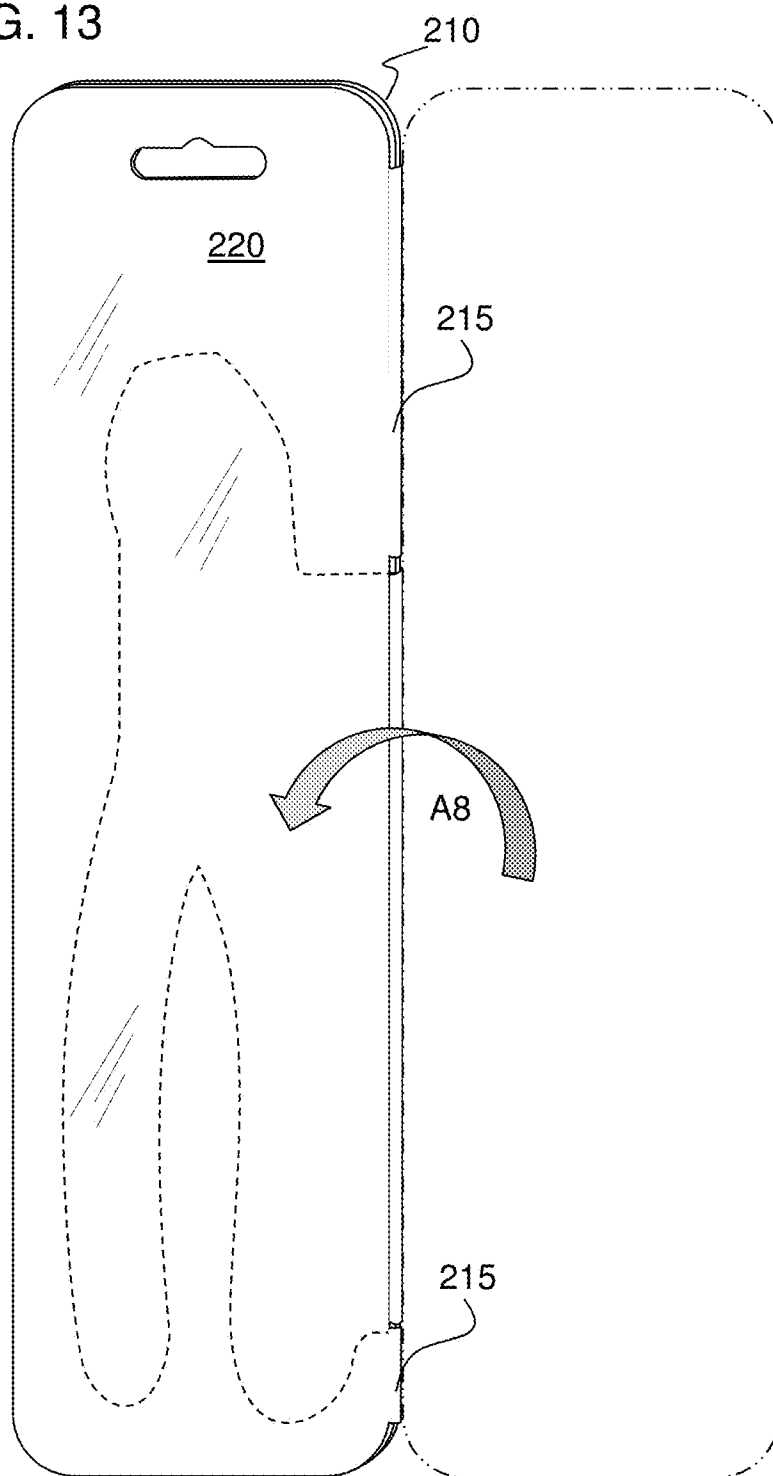
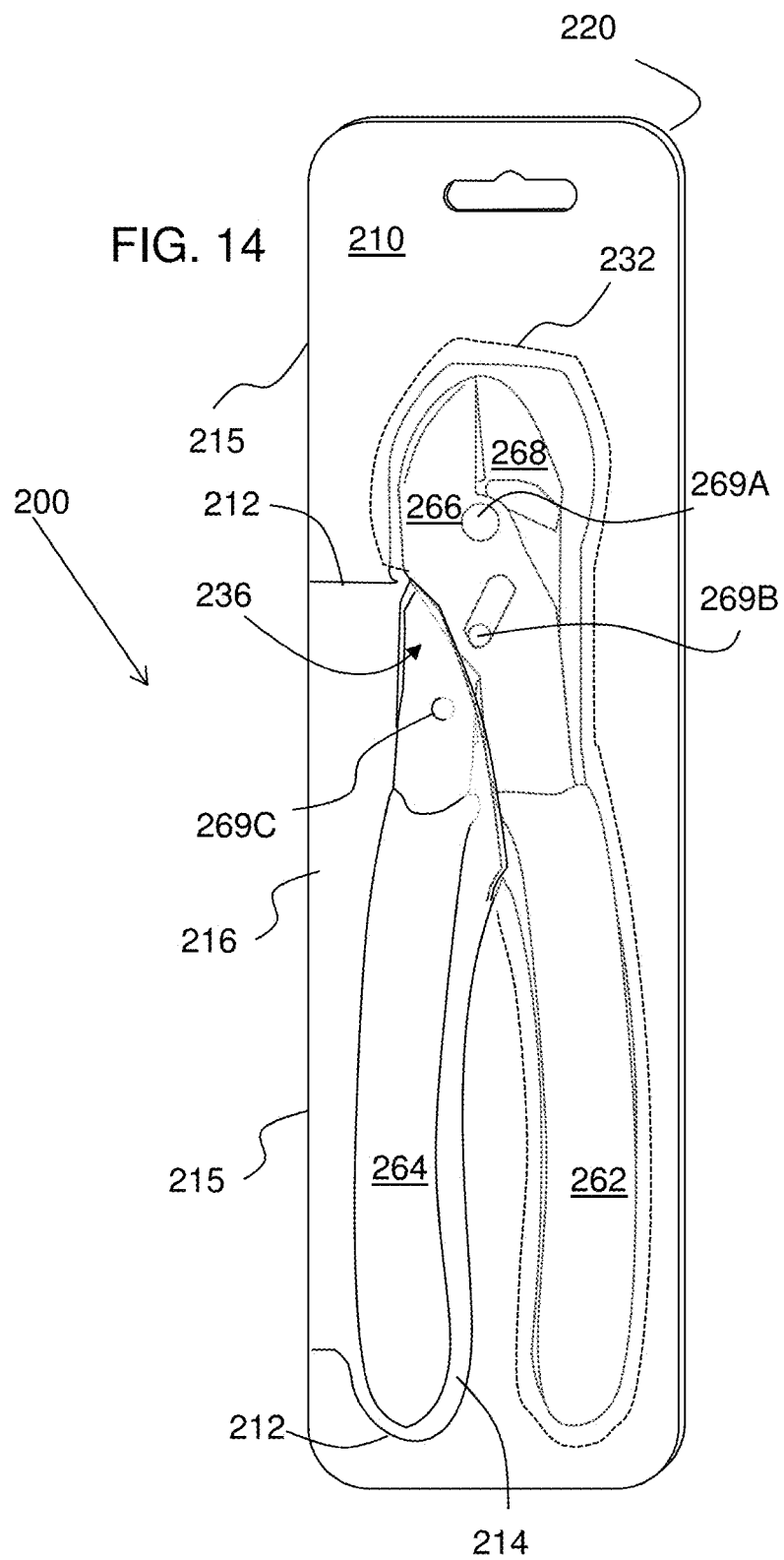


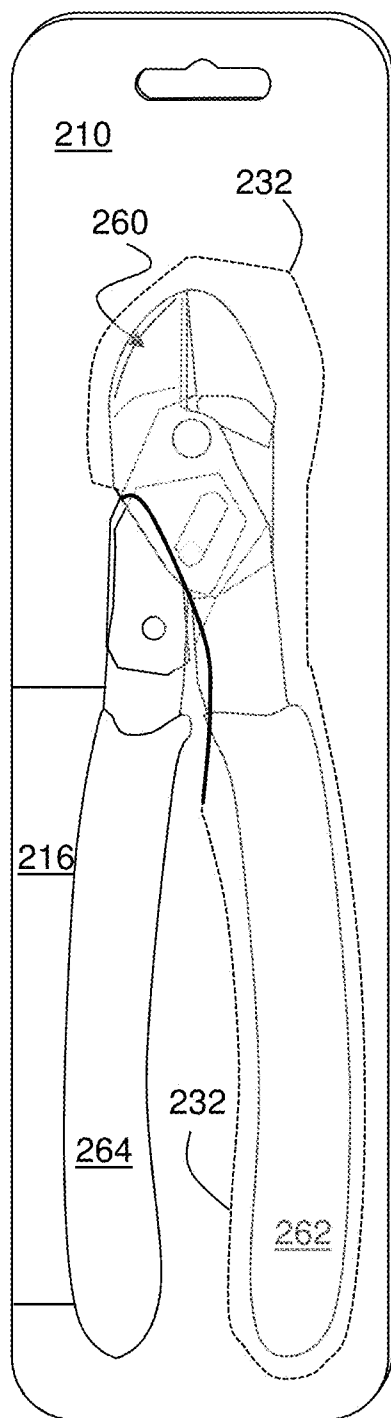
FIG. 13



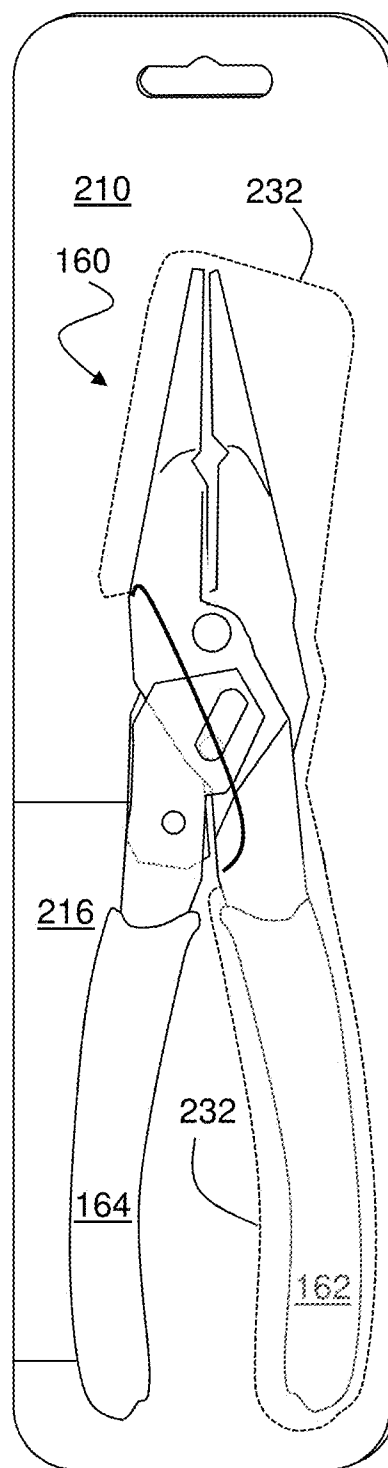




200  
FIG. 16A



202  
FIG. 16B



## BLISTER CARD WITH OPENING FOR TOOL HANDLE

### REFERENCE TO RELATED APPLICATION

**[0001]** This application claims the benefit of priority under 35 U.S.C. §119(e) of U.S. provisional application Ser. No. 62/006,309 filed on Jun. 2, 2014 which is hereby incorporated by reference in its entirety.

### BACKGROUND

**[0002]** The present application is directed to blister cards, and more particularly, to sandwich-type blister cards where the blister contains an item such as a tool with a part such as a handle extending outside the blister.

**[0003]** Merchandise items are often packaged on blister-type display cards. Such display cards may include a plastic blister to hold the product, and a printed paperboard card describing the product. The blister may be attached to the card, or may enclose the card. When tools are packaged in such display cards, it may be desired to have a portion of the tool exposed. This may be especially true with tools such as pliers, scissors, and the like where a handle may be left outside the blister so that a prospective purchaser may move the handle and observe the action of the tool. U.S. Pat. No. 4,165,805 to Fethke discloses a scissors housed in a blister attached to the front of a single card, with one of the scissors handles outside the blister. U.S. Pat. No. 4,872,551 to Theros discloses a clamshell blister that wraps around a card and pliers, with the handles of the pliers extending outside the clamshell blister at the bottom of the package. U.S. Pat. No. 5,279,417 to Seaton discloses a clamshell blister that wraps around a pair of gardening shears, with one handle extending sideways outside of the blister.

**[0004]** The present invention involves a blister whose perimeter flange is sandwiched between two cards, with one or more openings in the blister through which part or parts of the product (such as handles) may extend.

### SUMMARY

**[0005]** In one aspect a blister card is disclosed for holding a content item, the blister card including a front panel with a window therein created by at least partly separating a cutaway portion from the front panel; a back panel attached to the front panel; a blister comprising a blister cavity and a peripheral flange, the blister cavity protruding through the window and the peripheral flange received between the front and back panels; wherein the cutaway portion is positioned between the blister and the back panel; and wherein an opening is formed in the blister cavity through which a portion of the content item may protrude.

**[0006]** In another aspect, a method is disclosed for making a blister card holding a content item, the method including providing a front panel with a window therein defined by a cutline, and a back panel hingedly attached to a lower edge of the front panel; separating the cutaway portion from the front panel leaving a window in the front panel, and placing the cutaway portion onto the back panel in mirror registry with the window; placing into the window a blister having a cavity sized to receive at least part of the content item, the blister having a peripheral flange and a side wall, the side wall having a first opening and a second opening; inserting a content item into the blister card by threading a first portion of the content item through the first opening, with a second portion of the

content item being received in the blister cavity and a third portion of the content items extending through the second opening; folding the back panel over upon the front panel, with the peripheral flange between the panels; sealing together the front and back panels around their periphery; sealing together the front and back panels just outside the cutaway portion; and sealing together the back panel and the cutaway portion where the cutaway portion extends beyond the blister.

**[0007]** Other aspects of the disclosed packaging structures will become apparent from the following description and the accompanying drawings.

### BRIEF DESCRIPTION OF THE DRAWINGS

**[0008]** The attached Figures show blister cards including a blister sandwiched between a pair of cards.

**[0009]** FIG. 1A shows a plan view of a blank for making a front panel and back panel for a blister package;

**[0010]** FIG. 1B shows a plan view of the blank after moving a section of material from the front panel to the back panel, leaving an opening in the front panel;

**[0011]** FIG. 2 shows a blister being placed into the opening in the front panel;

**[0012]** FIG. 3 shows a tool being placed into the blister;

**[0013]** FIG. 4 shows the back panel being folded over onto the front panel, with the tool between the panels;

**[0014]** FIG. 5 shows the finished blister panel from the front side, containing the tool in a closed configuration;

**[0015]** FIG. 6 shows the finished blister panel from the front side, containing the tool in an open configuration;

**[0016]** FIGS. 7A-7C show plan views of alternative blanks for making a front panel and back panel for a blister package;

**[0017]** FIG. 8 shows a plan view of a blank for making a front panel and back panel for a another blister package;

**[0018]** FIG. 9 shows a plan view of the blank after folding a section of material from the front panel to the back panel, leaving an opening in the front panel;

**[0019]** FIG. 10 shows a blister being placed into the opening in the front panel;

**[0020]** FIG. 11 shows the blister in place in the opening in the front panel;

**[0021]** FIG. 12 shows a tool being placed into the blister;

**[0022]** FIG. 13 shows the back panel being folded over onto the front panel, with the tool between the panels;

**[0023]** FIG. 14 shows the finished blister panel from the front side, containing the tool in a closed configuration;

**[0024]** FIG. 15 shows the finished blister panel from the front side, containing the tool in an open configuration; and

**[0025]** FIGS. 16A-16B show plan views of two finished blister cards holding different tools.

### DETAILED DESCRIPTION

**[0026]** As various embodiments of the blister card are described, reference will be made to the attached Figures. Certain parts of the blister cards are denoted by reference numerals. Where there is more than one of the same feature, sometimes only one will be denoted by a reference numeral. If different blister cards have a common feature, it may only be described one time. For different embodiments, similar elements may be given the same reference number, incremented by 100, 200, etc.

**[0027]** Where assembly steps are described, these steps are exemplary and are not to be limiting as to the sequence of

operations used to arrive at the final blister card. Also, directions such as up, down, top, bottom, front, back, etc. are used for convenience in describing the structure and are not meant to be limiting. In most cases the blister cards described here are made from one or several blanks (that is, the cut sheet parts from which the blister cards are made by folding and other steps). However, it should be understood that certain unitary blanks may be provided instead as more than one part, and certain blanks may be combined into single blanks, while still arriving at the same finished package.

**[0028]** FIG. 1A shows a plan view of a blank 101 for making a blister card 100. The blank may include a front panel 110 with a back panel 120 hingedly attached through a fold line 115 at the lower edge of the front panel 110. The front and back panels 110, 120 may each include a hang hole 118, 128. An opening 112 may be provided in the front panel 110. The opening or window 112 may define a cutaway section 114 (sometimes called ‘window waste’) in front panel 110.

**[0029]** As shown in FIG. 1B, the cutaway section 114 may be flipped over and transferred (as per arrow A1) onto the back panel 120 into a mirrored position that will (after folding the panels along fold line 115) bring the cutaway 114 back into register with window 112. Cutaway 114 may be temporarily held in place by a small amount of glue or other suitable method.

**[0030]** FIG. 2 shows a blister 130 being positioned (as per arrow A2) into the window 112 on front panel 110. In the figure, the blank may be considered to be positioned with its outer surface facing down, and the blister with its blister cavity 134 facing downward and protruding down through window 112. The blister cavity 134 may have a face 135 and a wall 133. The blister may have a peripheral flange 132 extending partway around the blister. A first blister opening 136 may be provided (e.g. in blister wall 133) for a movable part of a content item, such as the handle of a tool, to be housed in the blister. A second blister opening 138 may be provided for a stationary part of the content item, such as another handle of the tool. The blister face 135 may have an opening (not shown) to allow a prospective customer to touch a content item. However, for certain content items such as those have a sharp edge or a pinching action, it may be preferable not to have openings in the blister face 135.

**[0031]** FIG. 3 shows a tool 160 being placed into the blister, by ‘threading’ stationary handle 162 down and back through second blister opening 138 as denoted by arrow A3, while movable handle 164 extends outward through first blister opening 136, with the tool jaws 166, 168 being received generally into the blister cavity 134.

**[0032]** FIG. 4 shows back panel 120 being folded upward (as denoted by arrow A4) onto front panel 110 with the tool positioned between the front and back panels.

**[0033]** FIG. 5 shows a front view of the blister card 100. The front panel 110 and back panel 120 may now be sealed together, for example by heat sealing, trapping the blister flange 132 between the panels. Nearly the entire facing surface of the front and back panels 110, 120 may be sealed together. This includes cutaway 114 which as shown in FIG. 5 is available for heat sealing when the tool handles 162, 164 are closed. A small portion under movable handle 164 may not be accessible in the closed configuration. Blister flange 132 is shown in dotted line (as it is actually hidden between the front panel 110 and back panel 120). The tool handles are shown in closed configuration, also showing how the second or movable handle 164 extends through first opening 136,

while the first or stationary handle 162 extends through second opening 138. Handles 162, 164 may extend beyond the panels and generally parallel to the plane of the panels. The second opening 138 may be rather small, which, along with the blister cavity 134 enclosing much of the tool jaws 166, 168, tends to hold the tool securely on blister card 100. The first opening 136 however is large enough to allow movement of the movable handle 164. FIG. 6 shows a similar front view with the tool handles in an open configuration. The small portion of the blister card previously hidden behind moveable handle 164 may be accessible for heat sealing when the handles 162, 164 are opened as shown in FIG. 6.

**[0034]** The panel material along cut lines 112 (between cutaway 114 and the remainder of front panel 110) is preferably well attached to back panel 120, otherwise they are a pick point at which the blister card may be torn. If glue or liquid adhesive is used behind cutaway 114, care must be taken so that the glue extends up to the cut line 112 but does not ooze past the cut line 112 and create unsightly appearance or stickiness. Preferably the cutaway area 114 as well as the remainder of the front panel 110 is heat-sealed to back panel 120. This is possible if the inner surface of the panels is coated with a heat-sealable coating. Then, once the blister card is loaded with the tool as in FIG. 5, the heat sealing can occur. The front panel 110 is heat-sealed to back panel 120, with the blister flange 132 sealed between the panels. Likewise the cutaway 114 is heat-sealed to the back panel 120. This makes a strong blister card with a neat appearance. Heat sealing may occur either with the blister card in the configuration shown in FIG. 5 or that shown in FIG. 6, or both, or configurations in between. The configuration of FIG. 5 permits the heat seal tooling to contact the full perimeter of the panels excepting the area under handles 162, 164, which however is a foldover or hinge area 116 that does not necessarily need sealing) and substantially the full perimeter of the tool where it rests on the card (including the blister flange 132 wherever it exists between the panels). By ‘substantially’ is meant all or nearly all the perimeter. The configuration of FIG. 6 allows slightly more sealing contact at the lower end of the panels (e.g. between handles 162, 164, but this is where the front and back panels join along fold line 115, so additional sealing may not be required here. The configuration of FIG. 6 permits the heat seal tooling to contact the entire exposed length of the cut line 112. Portions of the cutaway 114 that extend under the blister are not accessible to the heat seal tooling, but are held down by the tool and blister.

**[0035]** A comparison of FIGS. 5 and 6 helps illustrate the value of the blister card allowing a part of the content item, such as the handles 162, 164 of a tool, to be manipulated by a prospective buyer. As shown in FIG. 5, the example content item here is a set of long-nosed pliers 160 that has a main rotating pivot 169A, a sliding pivot 169B, and an ‘elbow’ pivot 169C. These pivots allow a complex action of the pliers. With tool jaws 166, 168 closed, the handles 162, 164 are about 16 degrees apart. As shown in FIG. 6, with the tool jaws 166, 168 open, the handles 162, 164 are about 63 degrees apart. Thus the jaws have opened about 30 degrees, while the handles open about 47 degrees. This suggests a mechanical advantage of about 1.5:1, which differs from sonic pliers which have a single (fixed or movable) pivot point. Without the ability to move the handles 162, 164 relative to one another, a prospective buyer may not understand the action of the tool. Thus there is an advantage to having one of the handles movable even with the rest of the tool securely held in

blister card **100**. Likewise with an item such as a scissors, a user may wish to feel through moving the handles how the cutting edges move against each other, as this may suggest the quality, strength, ease of use, etc of the scissors. For an item such as a curling iron or other item that may have a spring-open action, the user may wish to judge the strength of the spring by moving a part of the content item that extends outside the package.

[0036] The size, position, and shape of the window, the blister, and the blister opening or openings for the handle(s) may be set according to manufacturing preference.

[0037] FIGS. 7A-7C show several example blanks such as might be used for different sized or shaped objects, with tools being used as examples. FIG. 7A shows blank **101**, with cutaway **114**, as previously described for a blister card **100** to hold a long-nosed pliers. FIG. 7B shows a blank **102** with cutaway **114B** sized and shaped for holding a tool with shorter jaws. FIG. 7C shows a blank **103** with cutaway **114C** sized and shaped for holding a tool with even shorter jaws. Although the blanks may be typically be provided, as single pieces, as shown, they may also be provided as multiple pieces. The blanks may be made of a sheet material such as paperboard, or of a tear-resistant paperboard such as Mead-Westvaco NATRALOCK®.

[0038] Blister **130** may be made with common thermoform plastics such as PVC or APET but may also include a recycled material such as RRET or a biodegradable material such as PLA. However other materials including other plastics or paperboard may also be used. Besides thermoforming, the case or blister may be formed by injection molding or other manufacturing methods.

[0039] With the blister card **100** of FIGS. 1-7, the tool handles **162**, **164** extend downward beyond the card. This may save material from the blank **101**. FIGS. 8-16 show another blister card **200** where the blister card extends downward beyond the handles. While the front and back panels **110**, **120** of blister card **100** may be joined at a bottom fold **115**, the front and back panels **210**, **220** of blister card **200** may be joined at a side fold **215**.

[0040] FIG. 8 shows a plan view of a blank **201** for making a blister card **200**. The blank may include a front panel **110** with a back panel **120** hingedly attached through a fold line **215** at a side edge of panels. The front and back panels **210**, **220** may each include a hang hole **218**, **228**. An opening **212** may be provided in the front panel **210**. The opening or window **212** may define a cutaway section **214** (sometimes called 'window waste') in front panel **210**. The cutaway section **214** in front panel **210** may be hingedly attached to back panel **220** through fold line **215** by a hinge portion **216**.

[0041] As shown in FIG. 9, cutaway section **214** may be flipped over and transferred (as per arrow **A5**) along fold line **215** onto the back panel **220** in a position that will (after later folding the panels along fold line **215**) bring the cutaway **214** back into register with window **212**. Cutaway **214** may be temporarily held in place on back panel **220** by a small amount of glue or other suitable method. However, since cutaway **214** is attached by hinge portion **216**, further attachment may not be necessary at this point.

[0042] FIG. 10 shows a blister **230** being positioned (as per arrow **A6**) into the window **212** on front panel **210**. In the figure, the blank may be considered to be positioned with its outer surface facing down, and the blister with its blister cavity **234** facing downward. The blister cavity **234** may have a face **235** and a wall **233**. The blister may have a peripheral

flange **232** extending partway around the blister. A first blister opening **236** may be provided (e.g. in blister wall **233**) for a movable handle of a tool to be housed in the blister. Blister face **235** may have an opening (not shown) to allow a prospective customer to touch a content item. However, for certain content items such as those having a sharp edge or a pinching action, it may be preferable not to have openings in the blister face **235**.

[0043] FIG. 11 shows the blister having been positioned into the front panel **210**.

[0044] FIG. 12 shows a tool **260** being placed into the blister, by simple 'dropping' the tool into blister cavity **234**, as denoted by arrow **A7**. Movable handle **264** extends into free space of opening **212**, with the stationary handle **262** and the tool jaws **266**, **268** being received generally into the blister cavity **234**.

[0045] FIG. 13 shows back panel **220** being folded over (as denoted by arrow **A8**) along fold line **215** and onto front panel **210** with the tool positioned between the front and back panels.

[0046] FIG. 14 shows a front view of the finished blister card **200**, showing the blister flange **232** in dotted line (as it is actually hidden between the front panel **210** and back panel **220**). The tool handles are shown in closed configuration, also showing how the second or movable handle **264** extends through first opening **236** in the blister. The blister cavity **234** encloses much of the tool jaws **266**, **268**, which tends to hold the tool securely on blister card **200**. The first opening **236** is large enough to allow movement of the movable handle **264**. FIG. 15 shows a similar front view with the tool handles in an open configuration. Second handle **264** may extend beyond the card **200**, and generally parallel to the plane of the card.

[0047] As best seen in FIG. 14, the cut line **212** defining the cutaway portion **214** may be rather close to the edges of first handle **262** (so as to closely receive the blister **230** which snugly encloses handle **262**). However the cut line **212** may be spaced somewhat away from handle **262** (which is not enclosed by blister **230**) so that a heat sealing tool here may have room to seal the edges of cutaway **214** to back panel **220**.

[0048] The panel material along cut lines **212** (between cutaway **214** and the remainder of front panel **210**) is preferably well attached to back panel **220**, otherwise the cut lines **212** represent pick points at which the blister card may be torn. If glue or liquid adhesive is used behind cutaway **214**, care must be taken so that the glue extends up to the cut line **212** (for good attachment) but does not ooze past the cut line **212** (which would create unsightly appearance or stickiness). Preferably the cutaway area **214** as well as the remainder of the front panel **210** is heat-sealed to back panel **220**. This is possible if the inner surface of the panels is coated with a heat-sealable coating. Then, once the blister card is loaded with the tool as in FIGS. 14-15, the heat sealing can occur. The front panel **210** is heat-sealed to back panel **220**, with the blister flange **232** sealed between the panels. Likewise the cutaway **214** is heat-sealed to the back panel **220**. This makes a strong blister card with uncut appearance. Heat sealing may occur either with the blister card in the configuration shown in FIG. 14 or that shown in FIG. 15, or both, or configurations in between. The configuration of FIG. 14 permits the heat seal tooling to contact the full perimeter of the panels and substantially the full perimeter of the tool (including the blister flange **232** wherever it exists between the panels). By 'substantially' is meant all or nearly all the perimeter. The configuration of FIG. 15 permits the heat seal tooling to more

frilly contact the cutaway area **214** at the lower end of its extent, as well as contact most of the perimeter of the panels (excepting the area under handle **264**, which however is a foldover or hinge portion **216** that does not necessarily need seating) and the full perimeter of the tool (including the blister flange **232** wherever it exists between the panels). Portions of the cutaway **214** that extend under the blister are not accessible to the heat seal tooling, but are held down by the tool and blister.

[0049] A comparison of FIGS. **14** and **15** helps illustrate the value of the blister card allowing the handles **262**, **264** to be manipulated by a prospective buyer. This is only one example of how the blister card may be useful with many different content items. As shown in FIG. **14**, the content item for example is a set of pliers or cutters **260** that has a main rotating pivot **269A**, a sliding pivot **269B**, and an 'elbow' pivot **269C**. These pivots allow a complex action of the pliers as described previously. Without the ability to move the handles **262**, **264** relative to one another, a prospective buyer may not understand the action of the tool. Thus there is an advantage to having one of the handles movable even with the rest of the tool securely held in blister card **200**.

[0050] FIG. **16A** again shows the blister card **200** holding a pliers or cutter **260**. FIG. **16B** shows a slightly longer blister card **202** adapted for holding a long-nosed pliers **160**. Of course, the blister cards can be adapted to hold many content items. The content items may include tools such as the pliers and cutters used as examples here, but also gardening tools, scissors, cooking utensils, hair curling irons, phone charges, and any other items which have parts that move relative to one another and where a portion or portions of the content items may be contained at least partly with the blister, while another portion or portions, extend outside the blister.

[0051] Where more than one blank is used, the blanks may be assembled in various stages, including assembling a unitary blank into a package, assembling separate blanks and then joining them to form a package, and joining two or more blanks together, for example by heat sealing, gluing, mechanical fastening, or otherwise and then forming the combined blanks into the package.

[0052] The packages described herein may be assembled in stages at various locations, for example partially constructing the package, moving or shipping it to one or more other locations, and completing the assembly of the package. For example, a package may be formed into a flattened or collapsible structure, then moved or shipped to another location for final forming, filling, and closure.

[0053] Portions of the blister cards may be made of one, two, or more layers of material. It is to be understood that additional layers of material may be used based on manufacturing preferences. Portions of certain panels may be folded over or around the portions of other panels, creating multiple layers of material.

1. A blister card for holding a content item, the blister card comprising:

- a front panel with a window therein created by at least partly separating a cutaway portion from the front panel;
- a back panel attached to the front panel;
- a blister comprising a blister cavity and a peripheral flange, the blister cavity protruding through the window and the peripheral flange received between the front and back panels;
- wherein the cutaway portion is positioned between the blister and the back panel; and

wherein an opening is formed in the blister cavity through which a portion of the content item may protrude.

2. The blister card of claim **1**, wherein the cutaway portion is in register with the window.

3. The blister card of claim **1**, wherein the front panel and back panel are fastened together by adhesive.

4. The blister card of claim **1**, wherein the front panel and back panel are fastened together by heat sealing.

5. The blister card of claim **5**, wherein the back panel is heat sealed to either the front panel or the cutaway portion around substantially the entire perimeter of the content item.

6. The blister card of claim **5**, wherein the cutaway portion is heat sealed to the back panel along the perimeter of the cutaway portion excepting where the cutaway portion is between the blister and the back panel.

7. The blister card of claim **1**, wherein the front panel and back panel are hingedly joined along a lower edge of the panels.

8. The blister card of claim **7**, wherein the blister cavity receives an upper portion of the content item, while a lower portion or portions of the content item extend below the blister card.

9. The blister card of claim **8**, wherein a first portion of the content item extends downward through the opening in the blister cavity.

10. The blister card of claim **9**, further comprising a second opening in the blister cavity, wherein a second portion of the content item extends through the second opening.

11. The blister card of claim **1**, wherein the front panel and back panel are hingedly joined along a side edge of the panels.

12. The blister card of claim **11**, wherein the cutaway portion is hingedly joined to the back panel along the side edge of the back panel.

13. The blister card of claim **11**, wherein the blister cavity extends the full length of the content item.

14. The blister card of claim **13**, wherein at least a lower portion of the content item is not enclosed by the blister cavity.

15. The blister card of claim **14**, wherein the content item lower portion not enclosed by the blister cavity extends through the opening.

16. A method for making a blister card holding a content item, the method comprising:

providing a front panel with a window therein defined by a cutline, and a back panel hingedly attached to a lower edge of the front panel;

separating the cutaway portion from the front panel leaving a window in the front panel, and placing the cutaway portion onto the back panel in mirror registry with the window;

placing into the window a blister having a cavity sized to receive at least part of the content item, the blister having a peripheral flange and a side wall, the side wall having a first opening and a second opening;

inserting a content item into the blister card by threading a first portion of the content item through the first opening, with a second portion of the content item being received in the blister cavity and a third portion of the content items extending through the second opening;

folding the back panel over upon the front panel, with the peripheral flange between the panels;

sealing together the front and back panels around their periphery;

sealing together the front and back panels just outside the cutaway portion; and  
sealing together the back panel and the cutaway portion where the cutaway portion extends beyond the blister.

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