

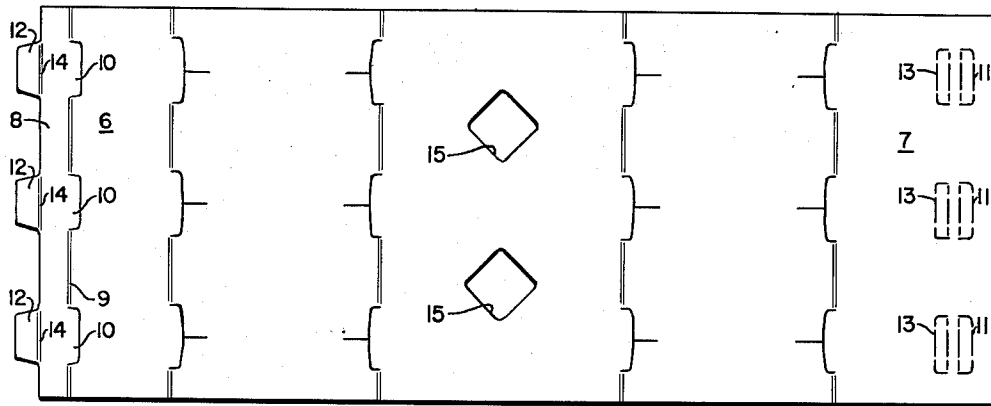
July 4, 1961

A. J. WEISS
PAPERBOARD CARRIER

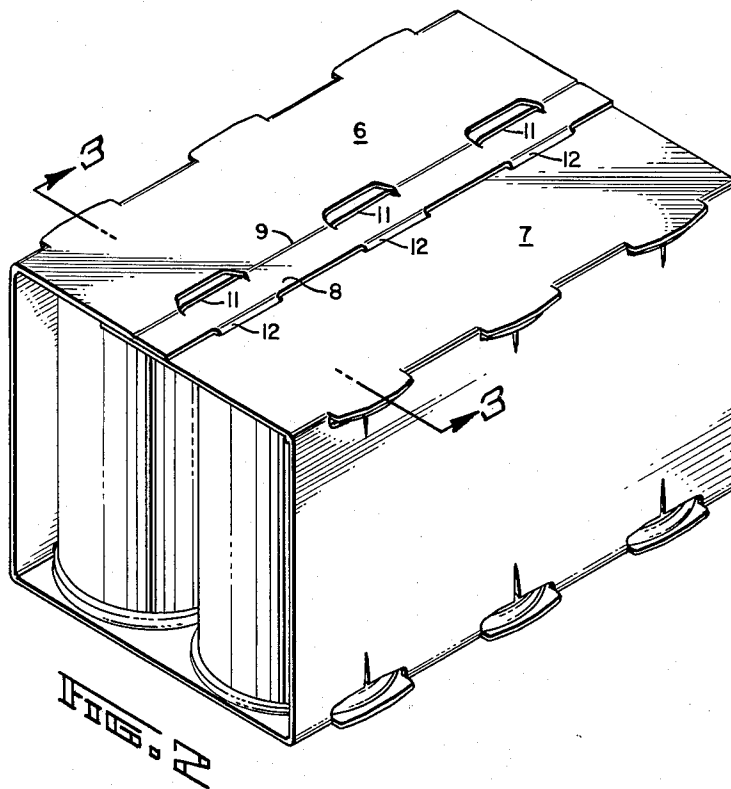
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3 Sheets-Sheet 1



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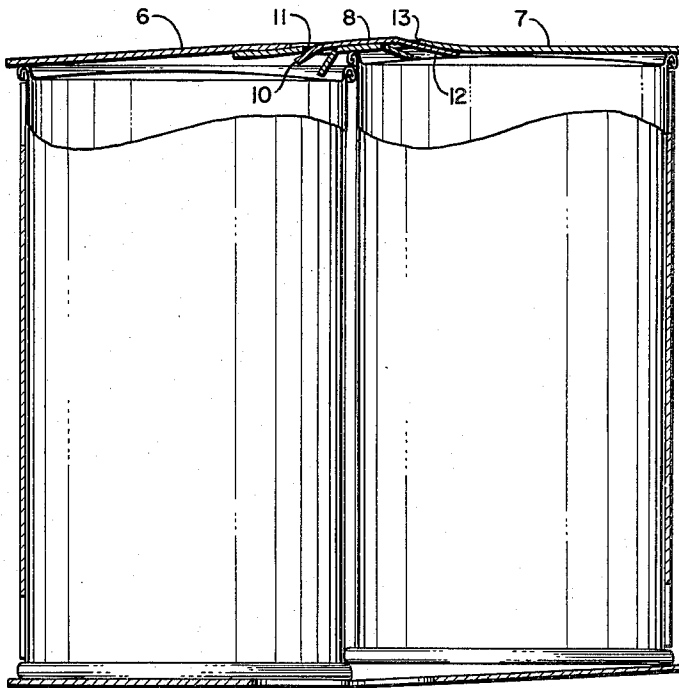


FIG. 3

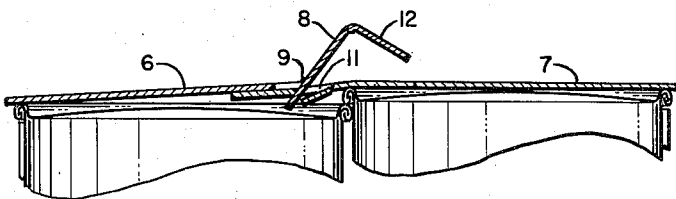


FIG. 4

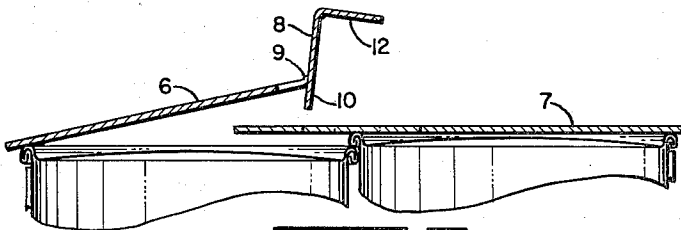


FIG. 5

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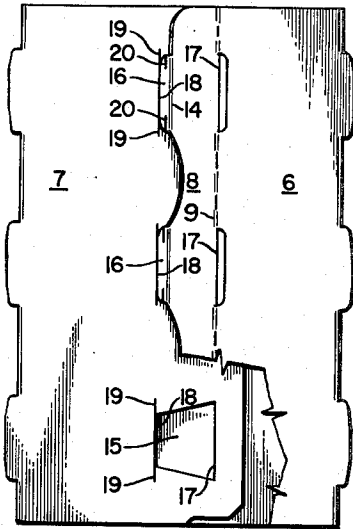


FIG. 6

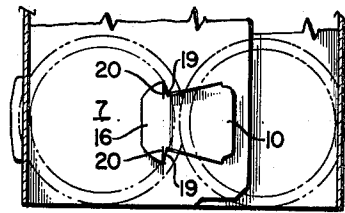


FIG. 8

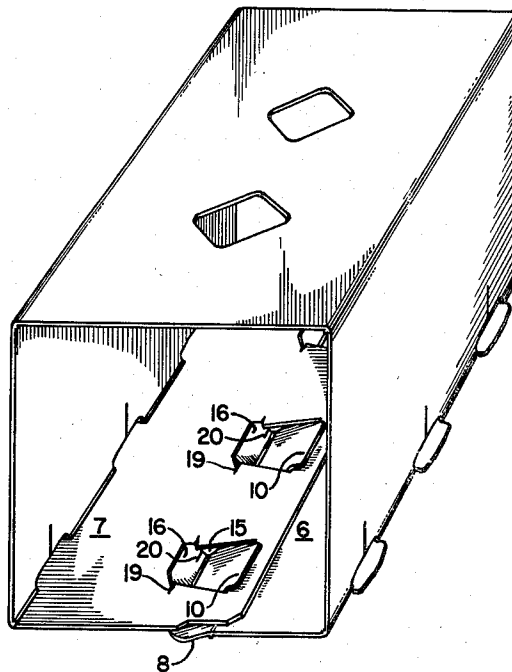


FIG. 7

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4 Claims. (Cl. 229-40)

The invention relates to locking means for a wrap-around paperboard carrier, and has special application to carriers for cans or canned goods. This application is a continuation-in-part of my copending application Serial No. 713,935, filed February 7, 1958, now abandoned.

In the construction of paperboard carriers of the open end wrap-around type it has been considered essential to make the package quite tight so that the cans will not drop out at the open ends. This type of carrier may be exemplified by the familiar "six-pack" in which canned products such as beer and foodstuffs are wrapped for retail merchandising, the cans being arranged in two rows of three in what the packaging art knows as a 2 x 3 carrier or pack. Usually some sort of a handle, finger openings or other carrying means is provided at the top of the pack. The means by which the cans are held in place are such as to depend very largely upon the provision of a good tight fastening between the two ends of the wrapper where they overlap at the top or bottom of the package. It has not been too difficult to obtain a fastening which is satisfactory as far as tightness goes, but the trouble is that the stouter the fastening, the more difficult it becomes for the consumer to get the package open and reach the contents. What usually has been necessary is to literally tear the package apart and this is rather difficult to do because of the tightness and toughness of the wrapper. I have contrived an improved locking device for a wrap-around paperboard carrier which combines the required attribute of tightness with those of simplicity and ease of packaging and unpacking. In fact when it comes to removing a carrier made according to my invention, it will be found that the entire package falls open by the simple lifting of a flap, involving no greater effort than to flip open the tuck flap of an ordinary cracker box. Yet until this is done, the package is as tight as a drum for safe handling and carrying. Moreover my carrier latching means can be refastened quite simply by hand as well as being adapted for use in conjunction with automatic machine packaging in the shipper's plant.

According to my invention, a wrap-around paperboard carrier having overlapping closure panels is provided with locking means comprising a latching flap extending from one such panel at a transverse fold line located within the overlap of the closure, the latching flap having a catch (or a series of catches) extending across and interrupting the fold line, and a latch opening in the other panel arranged to receive (or to release) the catch when the flap is folded back. The catch hooks around the edge of the opening when the flap is brought against the other panel. The flap can be spot glued to the other panel, or it may have a tongue (or a series of tongues) engaging a slot in the other panel for retaining the flap against the other panel, or the glued and the tongue and slot connections may, if desired, be used conjointly. In the latter case the glued connection provides additional security during shipment and handling, while the tongue and slot makes a handy reclosure. In any case the latching flap has a rotary latching and unlatching action in which a catch (or a series of catches) co-planar with the flap extends across the fold line of the flap, this fold line constituting the axis of rotation of the latch.

With reference to the drawings, I shall now describe

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the best mode contemplated by me for carrying out my invention.

FIG. 1 is a face view of a paperboard blank embodying my improved locking means.

FIG. 2 is a perspective view of the carrier, packed and locked.

FIG. 3 is a vertical cross sectional view taken on line 3-3 of FIG. 2.

FIG. 4 is a detail cross sectional view illustrating the locking or unlocking action.

FIG. 5 is a similar view showing the locking or unlocking action at another stage.

FIG. 6 is a bottom plan view of a carrier embodying another form of my improved locking means. This view illustrates a concluding phase of the locking operation.

FIG. 7 is a top perspective view of the carrier of FIG. 6.

FIG. 8 is a detail view of the same carrier showing one of the fastenings fully locked as seen from the inside.

In the drawings we see the application of my improved locking means to a wrap-around carrier having overlapping closure panels 6, 7. The locking means comprises a latching flap 8 extending from one such panel at a transverse fold line 9 located within the overlap of the closure. The latching flap has a catch, or a series of catches, 10, extending across and interrupting the fold line. The other panel, 7, has latch openings 11 arranged to receive (or release) the catches when the flap is folded back as in FIG. 5. In the latching action, the catches 10 hook around the edges of the openings 11 as the flap 8 is brought against panel 7.

Latching flap 8 preferably includes also a series of tongues 12 engaging slots 13 in panel 7, these tongues being conveniently arranged opposite the catches 10, and the tongues and catches extending in opposite directions. Notice that the catches 10 extend in the plane of the flap without folding (FIGS. 4 and 5) although they may bend a little (FIG. 3) in locking position, whereas the tongues 12 extend from the flap at fold lines 14 whereby the catches are engaged through the folding action of the flap and the tongues are angled into (or out of) flap retaining position as the flap is brought against (or lifted away from) panel 7.

In FIG. 2, it is assumed that the package is upside down although it will be understood that the locking means can be at either the top or bottom of the carrier. Usually they will be at the bottom so that the top will be left free for finger openings 15, or for a handle or other carrying means. In packaging with the use of automatic machinery it is feasible to close the panels 6 and 7 and fasten my locking means from the bottom. However, for convenience of illustration I have chosen to illustrate the package with the closure panels uppermost. This is the position for normal opening and reclosing of the package by the consumer. As one of the principal features of my invention lies in the ease with which such opening and reclosing operations can be performed I will begin my description of the operation with reference to opening the package as delivered to the customer. All that is required is to lift up the edge of flap 8 and pull it outwardly (and to the left as viewed in FIGS. 4 and 5). What happens is that tongues 12 are first withdrawn from slots 13, and then as flap 8 passes beyond the vertical the catches 10 are released from engagement with the latch openings. In packing, or reclosing, the operation reverses, catches 10 first entering the latch openings and the tongues 12 then angling themselves into their slots to hold latching flap 8 in locking position. Gluing of the flap to the closure panel 7 is optional, and if glue is used the tongues 12 may be used or not, as desired. Openings 11 and slots 13 in panel 7 may

be completely punched out, or left with punchings attached by small "nicks" as shown in the drawings in which case the punchings are freed along one edge and pushed inwardly during the operation of locking the carrier at the packaging plant. Conventional can retaining means may be employed, such as the slitted cut-outs shown at the corner folds of the carrier, but as such means are well known and form no part of the present invention they will not be described here.

In the latch opening and closing operations I have described, the action of the latch can perhaps best be comprehended within the term "rotary." Thus we have a rotary latching flap 8 including an integral co-planar catch 10 extending across the axis of rotation 9 of the latching flap whereby the catch is engaged, or disengaged, from latch opening 11 through rotation of the latching flap. The rotary unlatching action is produced by merely lifting the latching flap in a normal manner, and the rotary latching action can, if desired, produce an automatic tightening of the package as it cams or levers the closure panels into fully closed overlapping position. The catches 10 and tongues 12 are conveniently received within the spaces below the chines at the ends of the cans and tend to augment the action of other means provided to hold the cans themselves in place within the carrier.

FIGS. 6-8 show a modified form of my invention in which openings 15 of panel 7 are designed to receive both the catches 10 and the tongues 16. One part of each opening 15 receives the catch and another part receives the tongue. Thus the single opening is equivalent to opening 11 and slot 13 of the form of my invention described with reference to FIGS. 1-5. Opening 15 has spaced parallel edges 17 and 18, edge 17 being engaged by catch 10 and edge 18 being engaged by tongue 16. Slits 19 are provided at the ends of edge 18 to receive the ends of the tongue, as shown in FIGS. 7 and 8. Also, the ends of the tongue have slits 20 aligned with slits 19 when the locking means are fully engaged to provide an auxiliary catch for the tongue. Slits 19 and 20 cooperate to provide an effective catch which is easily engaged and disengaged. Its locking action, augmented by that of catches 10, is particularly effective against normal tendency of the closure to pull apart in handling, yet quite easy to release upon lifting of flap 8 to open the carrier. Also the provision of slits 19 in openings 15, and the form of such openings as disclosed, contribute importantly to ease of packaging. And these features have particular value when the packaging is to be performed with the use of automatic machines which rotate latching flap 8 to bring catches 10 into engagement and push tongues 16 against edges 18 of openings 15, guiding the ends of the tongues into locking position in which they engage slits 19. In FIGS. 6-8, I have shown my locking means as applied to the bottom of the carrier for packaging with the use of bottom-closing wrapping machines.

The terms and expressions which I have employed are used in a descriptive and not a limiting sense, and I have no intention of excluding such equivalents of the invention described, or of portions thereof, as fall within the scope of the claims.

I claim:

1. A wrap-around carrier having overlapping closure panels, one of the panels having a latching extension disposed beyond a transverse pivot line located within the overlap of the closure, the latching extension being formed with a catch which, when the latching extension is brought toward the other panel, is received in a latch opening in the other panel, the base of the catch being tightly aligned with the adjacent edge of the latch opening when the overlapping panels are drawn into their positions of maximum overlap, the overlapping edge of the inner one of said overlapping panels being spaced from the fold line of the other of said overlapping panels and said over-

lapping panels being free to be drawn together as the catch is hooked around said adjacent edge of the opening and the latching extension is pressed against the other panel to bring the side walls of the carrier tightly against the contents of the carrier whereby the action of the catch will produce an automatic tightening of the side walls against the contents as it cams or levers the closure panels into the fully closed overlapping position.

2. A paperboard blank for forming a wrap-around carrier for cylindrical objects such as cans having chines at their ends, said blank being rectangular in form and having five transverse fold lines which define three body panels and a closure panel extending from the outer end of each of the outer body panels and a latching flap at the end of one closure panel, said closure panels being of a width such that they overlap when the carrier is in erected position, a catch in one of said closure panels and an opening in the other closure panel both of which are within the overlap when the carrier is in erected position so that the catch can be received within the opening, the transverse fold line which defines said latching flap being within the overlap of the closure panels when the carrier is in erected position, said catch extending from said latching flap across and interrupting said fold line in the closure panel so that, when the carrier is being erected and said latching flap is being folded back, the catch hooks around the edge of the opening to draw the overlapping panels together.

3. A paperboard blank for forming a wrap-around carrier, said blank being rectangular in form and having five transverse fold lines which define three body panels and a closure panel extending from the outer end of each of the outer body panels and a latching flap at the end of one closure panel, said closure panels being of a width such that they overlap when the carrier is in erected position, a trapezoidal opening in one of said closure panels, the transverse fold line which defines said latching flap being located within the overlap of the closure, the latching flap being formed with a catch and a tongue spaced from said catch and aligned therewith, said catch being adapted to engage the base of said trapezoidal opening and said tongue being adapted to engage the apex thereof, laterally extending slits at the ends of the apex of said opening, laterally extending slits in said tongue aligned with the first-named slits when the catch and tongue are fully engaged, said tongue having a transverse dimension greater than the length of the apex of the opening and said catch having a transverse dimension less than the length of the base of the opening, the combined length of the apex of the opening and the slits at the ends thereof being greater than said transverse dimension of said tongue.

4. A paperboard blank for forming a wrap-around carrier for cylindrical objects such as cans having chines at their ends, said blank being rectangular in form and having transverse fold lines which define body panels and a closure panel extending from the outer end of each of the outer body panels, the outer ends of said closure panels forming the outer ends of said blank, said closure panels being of a width such that they overlap when the carrier is in erected position, one of said closure panels having a latching extension disposed along the free end of the closure panel beyond a bending axis disposed in said one closure panel, a catch in said one closure panel and an opening in the other closure panel, both of which are within the overlap when the carrier is in erected position so that the catch can be received within the opening, the bending axis being within the overlap of the closure panels when the carrier is in the erected position, said catch extending from said latching extension with its base portion substantially in line with and interrupting said bending axis, so that when the carrier is being erected and said latching extension is being folded back

about said bending axis, the catch hooks around the edge of the opening to draw the overlapping panels together.

References Cited in the file of this patent

UNITED STATES PATENTS

1,669,454	Close	May 15, 1928
1,996,997	Inman	Apr. 21, 1935
2,025,201	Graham	Dec. 24, 1935

5

2,102,497
2,140,932
2,304,362
2,572,159
2,786,572
2,798,603
2,857,048

Trogman	Dec. 14, 1937
Avery	Dec. 20, 1938
Huye	Dec. 8, 1942
Kells	Oct. 23, 1951
Gentry	Mar. 26, 1957
Grinspoon	July 9, 1957
Johnson	Oct. 21, 1958