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2,788,932

CONTAINER WITH LOCKING COVER

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2 Sheets-Sheet 2

FIG. 4.

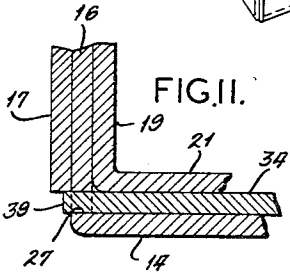
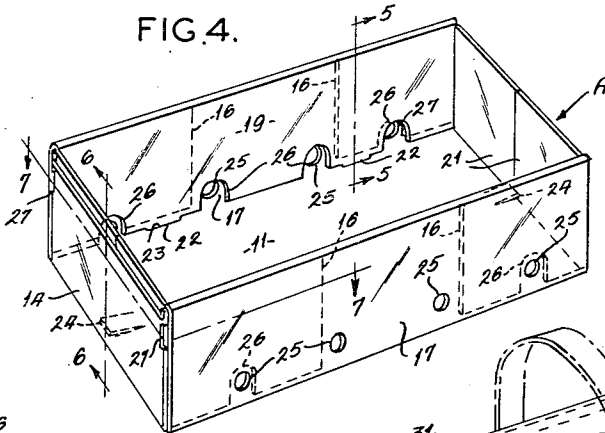


FIG. 11.

FIG. 12.

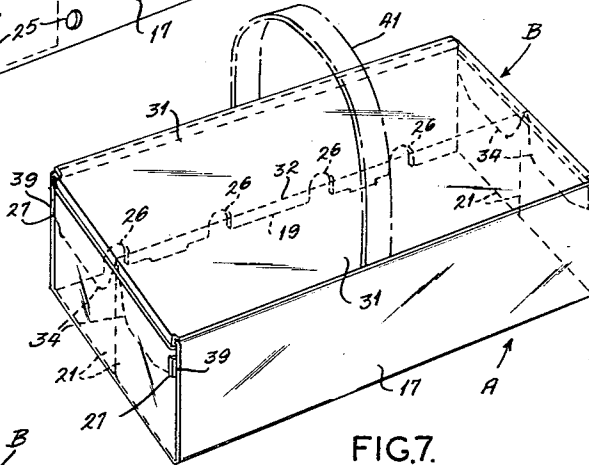


FIG. 7.

FIG. 9.

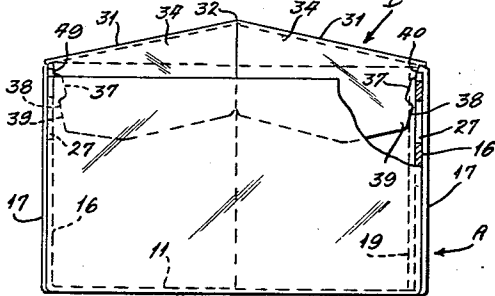
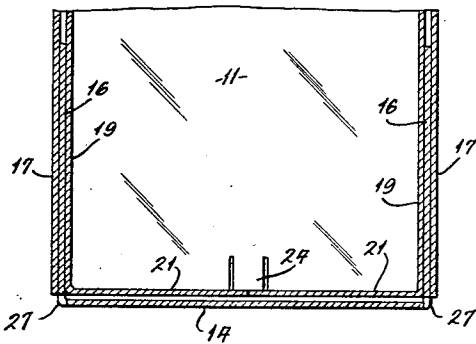
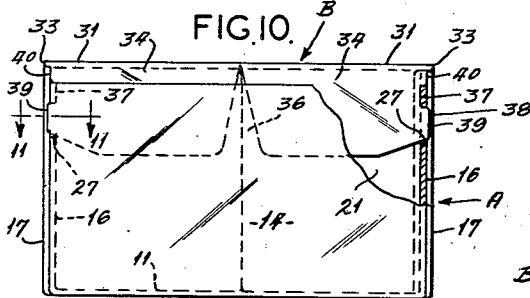


FIG. 10.



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2,788,932

CONTAINER WITH LOCKING COVER

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8 Claims. (Cl. 229—34)

This invention appertains, in general, to containers constructed of solid fibreboard, corrugated fibreboard or any other suitable, bendable material.

Basket-like containers constructed of fibreboard and paperboard material are well-known in the art. The fibreboard baskets and boxes are ordinarily utilized to carry fruits, vegetables and the like. Containers of this type customarily employ a unitary body member formed of a single fibreboard blank, and a cover member which is generally co-extensive in area and dimension with the top of the body member. Often employed are handle members secured to the body member of the container. The cover members are sometimes provided with fold lines which permit the cover to be bent to permit it to be placed on the container body beneath the handle member. There has been, however, a need for a cover member for containers of this type which would automatically lock onto the body member during shipment so as to protect the contents against damage. It is, therefore, an object of this invention to provide for a fibreboard-type carrying container, a self-locking, easily releasable cover member which will engage onto the container body to prevent accidental release therefrom.

It is a further object of this invention to provide, in a container of the type described, a locking cover member in which the cover member may be folded along a cover score line to disengage the locking elements from the container body.

A still further object of this invention is to provide, in a fibreboard carrying container, a cover locking means which will automatically engage into locking position and which locking means are disposed entirely within the interior of the wall structures of the container thereby preventing accidental release of the cover member.

Another object of this invention is to provide a self-locking cover member for a container, in which the locking elements of the cover member may be retracted inwardly from the container by bending the cover member about a pre-formed fold line.

A further object of this invention is to provide a cover locking device for a container in which the locking means are completely concealed from the interior and the exterior of the container body so as to prevent damage to the contents or accidental release thereof.

Other objects and advantages of this invention will be apparent to those skilled in the art upon a full and complete understanding of the construction of this device.

The invention also consists in the parts, arrangements and combinations of parts hereinafter described and claimed. The accompanying drawings form a part of this specification, and like numerals and symbols therein appearing refer to like parts wherever they occur.

Fig. 1 is a plan view of a blank illustrating a container body embodying a preferred form of the invention;

Fig. 2 is a plan view of a blank of a locking cover member embodying a preferred form of the invention.

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Fig. 3 is a perspective view of the blank shown in Fig. 1 illustrated in partially erected form;

Fig. 4 is a perspective view of a completely erected container body formed from the blank shown in Fig. 1;

Fig. 5 is a vertical, fragmentary, sectional view taken along lines 5—5 of Fig. 4;

Fig. 6 is a fragmentary, vertical, sectional view taken along lines 6—6 of Fig. 4;

Fig. 7 is a fragmentary, vertical, sectional view taken along lines 7—7 of Fig. 4;

Fig. 8 is a perspective view of an erected cover member formed from the blank illustrated in Fig. 2;

Fig. 9 is an end elevation of a cover member embodying the invention shown partially inserted into position;

Fig. 10 is an end elevation of a container embodying a preferred form of the invention shown with the cover member securely locked in position.

Fig. 11 is a fragmentary, sectional view taken along lines 11—11 of Fig. 10; and

Fig. 12 is a perspective view of a completely assembled container embodying a preferred form of the invention.

The body blank for a container body A, illustrated in Fig. 1, is provided with a bottom panel 11 defined by side scores 12 and end scores 13. End wall panels 14 are foldably connected to the bottom panel 11 along the end scores 13 and, in turn, are provided with end wall scores 15 which define the hinge connections of end wall flaps 16. Side wall panels 17 are connected to the bottom panel 11 along the side scores 12 and are provided with double top scores 18 which define the hinge connection of side wall top flaps 19. The side wall top flaps 19 are provided at their ends with corner scores 20 which define the hinge connection of the side wall end flaps 21.

In the particular embodiment illustrated, each side wall top flap 19 is provided with securing tabs 22 projecting from their outer free margins. The securing tabs are positioned to engage into securing voids 23 in the bottom panel 11 when the container is erected. Fastening tabs 24 are formed in the end margins of the bottom panel 11 and, as will be observed later in the specification, engage the side wall end flaps when the body member is erected. Ventilating openings 25 are formed in the side wall panels 17 adjacent the side scores 12 to register with ventilating cut outs 26 formed in the outer margin of the side wall top flaps 19 and the lower margins of the end wall flaps 16 when the container body is erected.

The container body is also provided with locking voids 27 formed in the end wall flaps 16 and spaced from the free upper edge 28 of the end wall flaps 16 by means of a web portion 29. The locking voids 27 are preferably formed so that one of their side margins 30 is in substantial alignment with the adjacent end wall scores 15.

A locking cover member B, as shown in Figs. 2 and 8, is provided with a pair of longitudinal half cover panels 31 foldably connected together along a central longitudinal score 32. The combined widths of the longitudinal cover panels 31 is preferably such that the free side margins 33 will extend over the side edges of the top edges of the side wall panel 17 of the body member A; however, this particular relationship will be more fully described later in the specification. Each longitudinal cover panel 31 is provided with a locking flap 34 foldably connected thereto along end scores 35. A wedge shaped cut out 36 disposed in substantial alignment with the central longitudinal cover score 32 spaces adjacent locking flap 34. A locking recess 37 is provided in the free outer side margin 38 of each locking flap 34. As will be apparent in a later portion of the specification, each locking recess 37 is positioned to cooperate and receive the web portion 29 of the end wall flap 16 which is inserted into the side wall structure. A locking projection 39 is formed

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in the free outer side margin 38 of each locking flap 34. The locking projection 39 engages into the locking voids 27 of the completed container. When the cover half panels 31 are in co-planar relation, the distance between the locking projections 39, as shown in Fig. 2, is greater than the interior distance between the upstanding side wall top flaps 19 so as to provide an effective locking engagement between the body member A and the locking cover member B.

In the particular embodiment illustrated, it was found to be desirable to include clearance shoulder 40 to provide the necessary clearance required in fitting the cover member B over the folded end wall construction of the container. The clearance shoulder 40 may be modified to conform with variations in the particular body member A employed.

The body member A may be erected by folding the end wall panels 14 upwardly about the end scores 13 into substantially right angular relation with the bottom panel 11. The end wall flaps 16 are then folded right angularly inwardly with respect to their adjacent end wall panels 14. The side wall end flaps 21 are then folded downwardly about their adjacent corner scores 20 into right angular relation to the side wall top flaps 19. The side wall panels 17 are then folded upwardly about the side scores 12 into right angular relationship with the bottom panel 11. In this position the side wall top flaps 19 are folded inwardly and downwardly into flatwise contacting relation with the previously positioned end wall flaps 16. In this position, previously folded side wall end flaps 21 are disposed in flatwise, spaced relation to the inner faces of the end wall panels 14 with their free inner edges in substantially abutting relationship, as shown in Fig. 4. The space or void between the side wall end flaps 21 and the end wall panels 14 provides an access opening to receive locking elements of the cover member. Also, in the embodiment described, the locking voids 27 are disposed adjacent the space or void between panels 14 and the flaps 21. With this arrangement, it is possible to conceal, from both the interior and exterior of the body, the locking elements of the cover member. The securing tabs 22 are automatically positioned, as shown in Fig. 5, in the securing voids 23 to immovably lock and secure the side wall top flaps 19 into position. Also, the fastening tabs 24 are deformed slightly upwardly, as shown in Fig. 6, to engage onto the inner faces of the side wall end flaps 21. In the particular embodiment of the body member A illustrated, it would be noted that the end wall panels 14 are substantially shorter in height than the adjacent side wall panels 17 and the adjacent side wall end flaps 21. This is to provide a clearance space to facilitate the insertion of the locking elements of the cover member.

The cover member B may be erected by folding the locking flaps 34 downwardly about their adjacent end scores 35 into substantially right angular relationship with the longitudinal half cover panels 31 as shown in Fig. 8. The longitudinal half cover panels 31 are then bent downwardly about the central longitudinal cover score 32 as shown in Fig. 9, preferably until the inner end edges defining the wedge shaped cut out 36 of the locking flaps 34 are in abutting relationship. The locking flaps 34 are inserted between the side wall end flaps 21 and the end wall panels 14 until the side edges 33 are in contact with the upper edges of the side wall panels 17. The longitudinal half cover panels 31 are then folded downwardly into substantially co-planar relation with each other as best shown in Fig. 10, thereby engaging the locking projections 39 into the adjacent locking voids 27. An expanded view of the locking relationship is illustrated in Fig. 11. The container is now in condition for use and the locking cover member B may not be removed until the longitudinal half cover panels 31 are bent downwardly with respect to the central longitudinal cover score 32 to release and disengage the locking projections 39 from the locking voids 27. In actual practice, the cover is

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released by forcing the side edges 33 of the cover half panels 31 horizontally inwardly toward each other thereby forcing the center of the locking cover member B, defined by the central longitudinal cover score 32, upwardly. As the side edges 33 are drawn inwardly, the locking projections 39 are moved horizontally inwardly out of the concealed locking voids 27 thereby disengaging the locking means and permitting the cover member B to be lifted from the body member A.

It will be noted that when the cover member B is locked in position, the web portion 29 is securely received into the locking recess 37 to provide a secure inner locking engagement between the body member A and the cover member B.

As shown in the dotted line portion of Fig. 12, a handle member 41 may be employed if desired to facilitate carrying of the container.

It is to be understood that the embodiments herein described are illustrative and not restrictive, and it is also to be understood that the invention may be susceptible of embodiment in other modified forms, and that all such modifications which are similar or equivalent hereto come equally within the scope of the claims next appearing.

What I claim is:

1. A container having a body with upstanding side and end walls and a locking cover member, the cover member comprising a pair of half panels foldably connected together along a central fold line and having side marginal edges, each half panel being substantially co-extensive in length with the container body and having a locking flap foldably connected to each end thereof, each locking flap having an outer side margin and a lateral locking projection thereon, the body side walls having cooperating voids disposed adjacent the end margins thereof and spaced to receive the lateral locking projections on said cover end locking flaps when the cover member is positioned on the body member, the cover member being releasable from the body member when the side marginal edges of the half cover panels are moved horizontally inwardly along the central fold line thereby retracting the lateral locking projections from the cooperating voids in the body side walls.

2. A container having a body with upstanding side wall structures and end walls and a locking cover member, the cover member comprising a pair of longitudinal half panels foldably connected together along a central longitudinal fold line and having free marginal side edges, each half panel being substantially co-extensive in length with the container body and having a separate locking flap foldably connected to each end thereof, each locking flap having inner and outer side margins and a locking recess disposed in the outer side margin of the locking flap and spaced from adjacent foldable connection with the half panel and defining a lateral locking projection thereon, the body side wall structure having cooperating voids disposed adjacent the end margins thereof and spaced to receive the lateral locking projections on said cover end locking flaps when the cover member is in position on the body member, the cover member being releasable from the body member when the marginal side edges of the half cover panels are moved horizontally inwardly to force the portion of the cover member defined by the central longitudinal fold line upwardly, retracting the lateral locking projections from the cooperating voids in the body side walls.

3. A container having a body and a locking cover member, the body having a bottom with foldably connected, upstanding side wall structures and end walls and body end flaps disposed in spaced, parallel relation to the inner face of the end walls, the locking cover member having a pair of half cover panels connected together along a central longitudinal fold line, each half cover panel being substantially equal in length to the length of the container body and having a depending end lock-

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ing flap foldably connected thereto, each end locking flap having a free side edge with a locking projection extending laterally therefrom, in the closed, locking position of the cover member, the locking flaps being disposed intermediate the body end walls and the spaced end flaps, the body side wall structure having voids therein positioned intermediate the body end walls and the end flaps and spaced to receive the locking projection on the cover locking flaps.

4. A container having a body and a cover locking member, the body having a bottom with foldably connected, upstanding side wall structures and end walls and body end flaps disposed in spaced, parallel relation to the inner face of the end walls, the locking cover member having a pair of half cover panels connected together along a central longitudinal fold line, each half cover panel being substantially equal in length to the length of the container body and having a separate, depending end locking flap foldably connected thereto, each end locking flap having free outer and inner side edges, said outer side edge having a locking projection extending laterally therefrom, said inner side edge being relieved to provide a clearance space between adjacent locking flaps, in the closed, locked position of the cover member, the locking flaps being disposed intermediate the body end wall and the spaced end flaps, the body side wall structure having cooperating voids therein positioned intermediate the body end walls and the end flaps and spaced to receive the locking projection on the cover locking flaps.

5. The invention set forth and claimed in claim 4 wherein the side marginal edges of the half cover panels of the locking cover member are adapted to be moved inwardly thereby flexing the half cover panels upwardly about the central longitudinal fold line to retract the laterally extending locking flaps inwardly from the locking voids in the body end walls to permit the cover member to be removed from the container body.

6. The invention set forth and claimed in claim 4 wherein the half cover panels are of sufficient width so that, in the closed, locked position of the cover member, their free longitudinal side edges extend in overlapping relation to the top margins of the container body side walls.

7. A container having a body and a locking cover member, the body having a bottom with foldably connected upstanding side and end walls and side wall end flaps disposed in spaced, parallel relation to the inner face of the end walls, the locking cover member having a pair of half cover panels connected together along a central longitudinal fold line, each half cover panel being substantially equal in length to the length of the con-

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tainer body and having a separate depending end locking flap foldably connected thereto, each end locking flap having a free outer side edge with a cut out portion disposed adjacent the foldable connection to the half cover panel and a laterally extending locking projection disposed adjacent the cut out portion, in the closed, locked position of the cover member, the locking flaps being disposed intermediate the body end walls and the spaced end flaps, the body side wall structure having a web portion adjacent the upper portions of the end margins thereof and a locking void positioned beneath said web portion, in the locked position of the cover member, the lateral projection on each cover locking flap being disposed outwardly through the locking void in the container side wall structure and the cut out portion in each locking flap receiving, in cooperating relation, the web portion in the upper portion of the end margin of the body side wall structure.

8. A container having a body and a locking cover member, the body having a bottom with foldably connected, upstanding side wall structures and end walls, the side wall structure being provided with folded-over top marginal side wall flaps disposed vertically downwardly in flatwise relation to the adjacent side walls, the side wall top flaps having foldably connected extensions forming end flaps positioned in spaced parallel relation to the inner face of the container end wall, the container end walls being provided with integral, foldably connected end extensions forming end wall flaps disposed intermediate and forming a part of the side wall structure, the locking cover member having a pair of half cover panels connected together along a central longitudinal fold line, each half cover panel being substantially equal in length to the length of the container body and having a separate, depending end locking flap foldably connected thereto, each end locking flap having a free outer side edge with a locking projection extending laterally therefrom in the closed, locked position of the cover member, the locking flaps being disposed intermediate the body end walls and the spaced end flaps, the body side wall structure having voids extending through the end wall end flap therein, said voids being disposed intermediate the body end walls and the end flaps and spaced to receive the locking projections on the cover locking flaps.

References Cited in the file of this patent

UNITED STATES PATENTS

2,573,706	Grant	Nov. 6, 1951
2,676,749	Argodale	Apr. 27, 1954