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3,081,017

CARTON

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Fig. 1

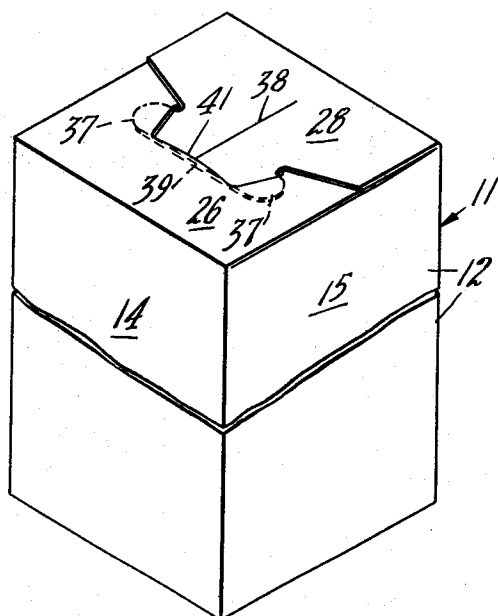


Fig. 2

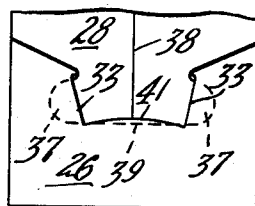


Fig. 5

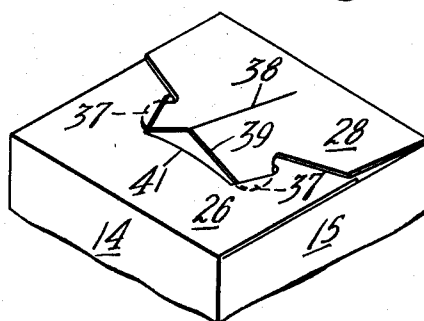


Fig. 3

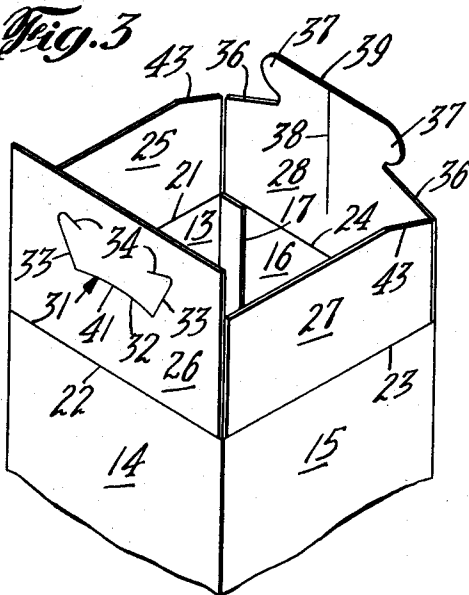
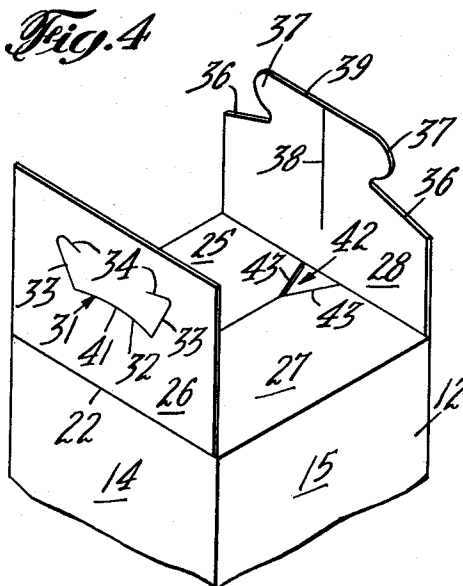


Fig. 4



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3,081,017
CARTON

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This invention relates to cartons or containers and has particular reference to cartons having end closures or flaps which upon being overlapped and interfolded together may be locked and unlocked readily by a mere touch of a flap.

The present invention is directed to cartons of rectangular, preferably square, configuration made from a single blank of paperboard, fibreboard, or the like, which may be opened and closed repeatedly in its use and/or reuse for holding articles such as paper cups, bowls, plates, etc., which may be arranged in stacked relation, which cartons also may be folded flat in a knockdown condition for storage purposes and for shipment. Such a carton is provided with a main body portion having a plurality of end flaps at opposite ends thereof which are hingeably connected and which are arranged for being folded inwardly in overlapping relation and interengaged by a slit and tongue, ear, tab or similar connection, whereupon the outer folds thereafter are tucked or locked together in closed position to insure the ends against accidental opening. The interengaging and locking feature of the carton may be applied to a single end of the carton or to both ends particularly where the glueing of the bottom flap closure of the carton is impractical or believed unnecessary.

An object of the present invention is the provision of a carton having a body portion with a plurality of end closure flaps at its opposite ends which may be folded inwardly in overlapping and interengaging relation and which may be locked together and/or unlocked readily by a mere touch of a flap.

Another object is the provision of a medial line of crease or weakness provided in an outer flap which will permit bending or flexing of the flap outwardly from the normal plane of its end closed position to facilitate insertion of a pair of oppositely disposed and laterally extended ears or tabs into a pair of spaced apart slits provided in a cooperating flap without bending, tearing, or distorting the tabs during the insertion thereof.

A further object is the provision of a carton having end flaps for closing the end thereof of a projection formed in one of the outer flaps under which a terminal edge of another coacting flap may be tucked for locking the outer flaps together in closed position.

Still another object is the provision in such a carton of a pair of oppositely disposed flaps which, upon being swung inwardly, provide an inner end wall of the carton and wherein these flaps are provided with a finger opening produced by a cut-away corner of each of the flaps to facilitate lifting these flaps during an opening operation of the carton.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawings, discloses a preferred embodiment thereof.

Referring to the drawings:

FIGURE 1 is a perspective view of a carton embodying the present invention illustrating the end closure flaps in closed and locked position;

FIG. 2 is a fragmentary top plan view of the carton shown in FIG. 1 illustrating the interengaging and locking together of the outer flaps;

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FIG. 3 is a view similar to FIG. 1 showing the inner and the outer closure flaps in an opened position;

FIG. 4 is a view similar to FIG. 3 showing the inner pair of flaps in a closed position; and

FIG. 5 is a view similar to FIGS. 3 and 4 showing one of the outer flaps in a bent position for tucking of the ears into slits provided in another of the outer flaps.

As a preferred or exemplary embodiment of the instant invention, the drawing discloses a carton 11 formed from a single blank of fibreboard, paperboard, or similar material, cut, slit, and creased in any suitable manner so that upon being formed into shape provides a substantially rigid body portion 12, rectangular in cross-section having four side walls 13, 14, 15 and 16. The side edges of the body portion 12 are joined together along one corner of the carton in a lap side seam 17 which is secured together by any suitable adhesive (FIG. 3).

At the opposite ends, the carton body 12 is provided with a plurality of end closure flaps which are slit at the four corners and creased transversely in order to provide hinge connections between the flaps and the four side walls of the main body portion. For the purpose of this invention, only the flaps which are applicable to the upper end of the carton will be described hereinafter, but it is to be understood that the same or a similar type may be used for the bottom end of the carton.

Hence, each of the side walls 13, 14, 15 and 16 adjacent the upper end of the carton has a transverse crease line 21, 22, 23, and 24 formed therein to provide a hinge connection for each end flap 25, 26, 27, and 28. The end flaps 25, 27 constitute a pair of inner end flaps since they are folded inwardly in advance of the others and cooperate to form an inner end wall of the carton. These inner end flaps preferably are of a predetermined length so that upon being folded inwardly and downwardly into a closed position (FIG. 4) their inner edges come into substantial abutting relation. It is also to be understood however, that the inner edges of the inner flaps may be spaced slightly apart or overlapped as desired.

The other end flaps 26, 28 provide a pair of outer end flaps and these also are folded inwardly and downwardly upon the inner end flaps 25, 27 and upon each other in overlapping relation and together form an outer end wall of the carton. These outer end flaps 26, 28 preferably are provided with interengaging and locking elements so that upon being swung into closed position these elements coact and thus retain the outer end walls securely closed without the need of additional sealing or fastening means.

One of the outer flaps 26 serves as the first of this pair of elements to be swung inwardly and thus is provided with a substantially U-shaped slit 31 cut therein (FIGS. 3 and 4). An intermediate portion 32 of this slit extends transversely of the flap 26 and at each end merges into an outwardly sloping or angularly extended slit portion 33 which at their outer ends terminates in inwardly sloping portions 34. The corners of the slit 31 at each of its points of merger preferably are rounded to protect the slit 31 from tearing.

The other or remaining end flap 28 is cut along sloping lines 36 which extend inwardly from each side of the flap and merge into a base portion of a pair of laterally and outwardly extended tabs or ears 37. These tabs are adapted to coact with the angularly extended slit portions 33 when the outer end flap 28 is swung downwardly into overlapping and closed position upon the outer end flap 26 (FIG. 5) for interengaging the outer flaps together.

In order to protect the tabs 37 from being bent, torn, or distorted, during their insertion into the angularly ex-

tended slit portions 33, the outer end flap 28 is provided with a weakened medial portion extending inwardly from the outer edge of this flap. For this purpose, a crease line 38 is pressed into the outer flap which will permit this flap to be flexed or bent outwardly from the normal or flat plane position of the outer end wall as best illustrated in FIG. 5 for easy insertion of the tabs 37 into these slits 33.

Following the interengaging of the outer end flaps 26, 28, the latter of these flaps may be locked in its closed position. This is effected by tucking in an outer marginal edge portion 39 of this outer flap beneath a projection 41 provided in the coacting outer flap 26. The projection 41 is formed by the intermediate slit portion 32 which preferably has an arcuate outline, defining the projection along one side of the slit having a curved forward edge (FIGS. 3 and 4).

In order to effect the locking of the interengaged outer end flaps 26, 28, a mere touch of the outer flap 28 is all that is necessary. Such a touch applied at the medial area of the outer flap 28 as best illustrated in FIG. 5 to bring the flap to a position substantially normal or in the plane of the outer end wall (FIGS. 1 and 2), thus snaps and engages the outer edge portion 39 of the flap 28 beneath the projection 41.

In order to open the upper end of the carton, a similar touch action is all that is required. For this purpose a slight pressure applied to the outer end flap 26 adjacent the projection 41, releases the outer edge portion 39 from beneath the projection 41 which thus unlocks the outer end flaps 26, 28 whereupon the medial portion of the outer flap 28 then may be lifted upwardly to disengage the outer flaps which thereafter are raised into the position best illustrated in FIG. 4 exposing the inner pair of flaps 25, 27. These inner flaps then may be lifted upwardly to expose the contents of the carton and to remove the same as desired. Hence, a finger opening 42 is provided in the inner end flaps to facilitate this operation. For this purpose, one corner of each of the abutting edges of the inner flaps 25, 27 is cut away along an angular line of cut 43 and thus provides a substantially triangular finger opening at one side edge adjoining the base of the outer flap 28.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

1. A carton for holding articles comprising a substantially rectangular fibre body, having four side walls, a flap extending from each of said walls at one end of said body, said flaps arranged for being folded inwardly in cooperative relation for closing the end of the carton, a pair of said flaps extending from opposite body side walls constituting an inner end wall of the carton, a pair of outer flaps extending from opposite side walls intermediate the first of said side walls arranged for overlapping engagement upon said inner end wall flaps and upon each other providing an outer end wall of the carton, one of said outer flaps having a substantially U-shaped slit therein including a substantially arcuate intermediate portion and angularly disposed end portions, said angularly disposed end portions extending obliquely outwardly toward the outer edges of the flap, said intermediate portion defining a projection along one side of said slit curved outwardly and engageable over the edge portion of the other of said outer flaps, said other flap having a pair of laterally and outwardly extending tabs for insertion into said angularly disposed end portions for interengaging and locking said outer flaps together,

and a crease line in said other outer flap extending inwardly from the outer edge thereof providing a medial line of bend to permit outward bending of said other flap from its normal flat plane to facilitate the insertion of said tabs into said angularly disposed end portions without bending and distorting said tabs.

2. A carton for holding articles comprising a substantially rectangular fibre body, having four side walls, a flap extending from each of said walls at one end of said body, said flaps arranged for being folded inwardly in cooperative relation for closing the end of the carton, a pair of said flaps extending from opposite body side walls constituting an inner end wall of the carton, another pair of said flaps extending from opposite side walls intermediate the first said side walls arranged for overlapping engagement upon said inner end wall flaps and upon each other providing an outer end wall of the carton, one of said outer flaps having a slit therein including an intermediate portion and divergent end portions, another of said outer flaps having a pair of laterally and outwardly extending tabs for insertion into said divergent end portions of said slit for interengaging said outer flaps together, and a projection bordering upon said intermediate slit portion engageable with an edge portion of said outer flap intermediate said tabs for locking said flaps together as the outer wall of the carton.

3. A carton for holding articles comprising a substantially rectangular fibre body having four side walls, a flap extending from each of said walls at one end of said body, said flaps arranged for being folded inwardly in cooperative relation for closing the end of the carton, a pair of said flaps extending from opposite body side walls constituting an inner end wall of the carton, another pair of said flaps extending from opposite side walls intermediate the first said side walls arranged for overlapping engagement upon said inner end wall flaps and upon each other providing an outer end wall of the carton, one of said outer flaps having a slit therein including an intermediate portion and angularly disposed end portions, another of said outer flaps having a pair of laterally and outwardly extended tabs for insertion into said angularly disposed end portions of said slit for interengaging said outer flaps together, and a crease line in said outer flap extending inwardly from the outer edge thereof providing a line of bend for a medial portion of said flap to permit it to be bent outwardly from its normal flat plane to facilitate the insertion of said tabs into said angularly disposed end portions of said slit without bending and distorting said tabs, and a projection bordering upon one side edge of said intermediate portion of said slit engageable with an edge portion of said outer flap intermediate said tabs for locking said flaps together as the outer wall of the carton.

4. A carton for holding articles comprising a substantially rectangular fibre body having four side walls, a flap extending from each of said walls at one end of said body, said flaps arranged for being folded inwardly in cooperative relation for closing the end of the carton, a pair of said flaps extending from opposite body side walls having a predetermined length for edge butting relation and together constituting an inner end wall of the carton, another pair of said flaps extending from opposite side walls intermediate the first said side walls arranged for overlapping engagement upon said inner end wall flaps and upon each other providing an outer end wall of the carton, one of said outer flaps having a slit therein defining an arcuate intermediate portion and angularly extended end portions, another of said outer flaps having a pair of laterally and outwardly extended tabs for insertion into said angularly extended slit portions for interengaging said outer flaps together, a projection defined by and bordering upon the arcuate intermediate portion of said slit and engageable with an edge portion of the other of said outer flaps for locking said flaps together as the outer wall of the carton, and a finger opening at the abut-

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ting edges of said inner wall flaps for inserting a finger therein to facilitate lifting said latter flaps when opening the carton.

5. A carton as claimed in claim 4 in which the finger opening in said inner wall flaps is provided by having two adjacent corners at the abutting edges cut away and defining a substantially triangular opening.

6. A carton for holding articles comprising a substantially rectangular fibre body having four side walls, a flap extending from each of said walls at one end of said body, said flaps arranged for being folded inwardly in cooperative relation for closing the end of the carton, a pair of said flaps extending from opposite body side walls having a predetermined length for edge butting relation and together constituting an inner end wall of the carton, another pair of said flaps extending from opposite side walls intermediate the first said side walls arranged for overlapping engagement upon said inner end wall flaps and upon each other providing an outer end wall of the carton, one of said outer flaps having a slit therein defining an arcuate intermediate portion and angularly extended end portions, another of said outer flaps having a pair of laterally and outwardly extended tabs for insertion into said angularly extended slit portions for interengaging said outer flaps together, and a crease line in said outer flap extending inwardly from the outer edge thereof providing

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a line of bend for a medial portion of said flap to permit it to be bent outwardly from its normal flat plane to facilitate the insertion of said tabs into said slit without bending and distorting said tabs, a projection defined by and bordering upon the arcuate intermediate portion of said slit and engageable with an edge portion of the other of said outer flaps for locking said flaps together as the outer wall of the carton, and a finger opening at the abutting edges of said inner wall flaps for inserting a finger therein to facilitate lifting said latter flaps when opening the carton.

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