

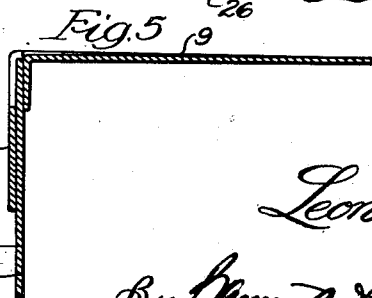
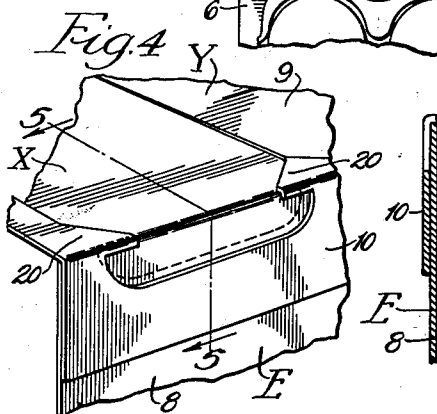
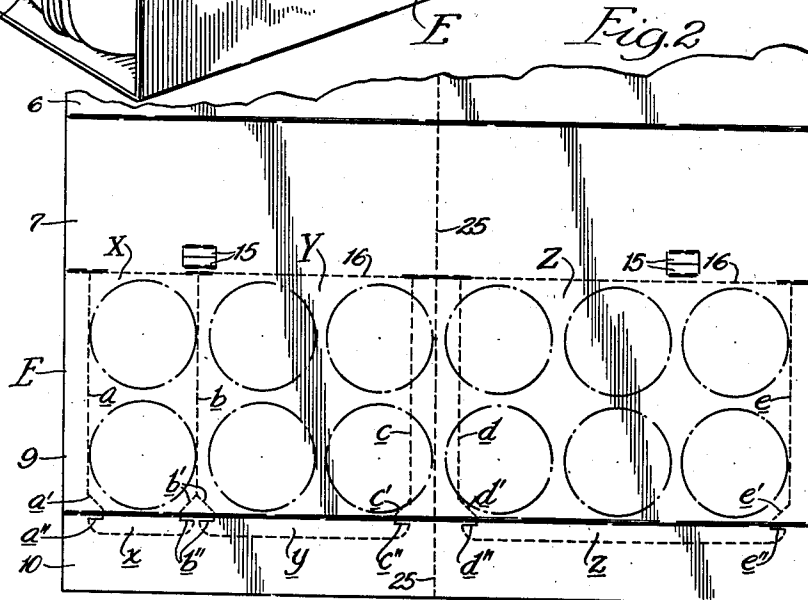
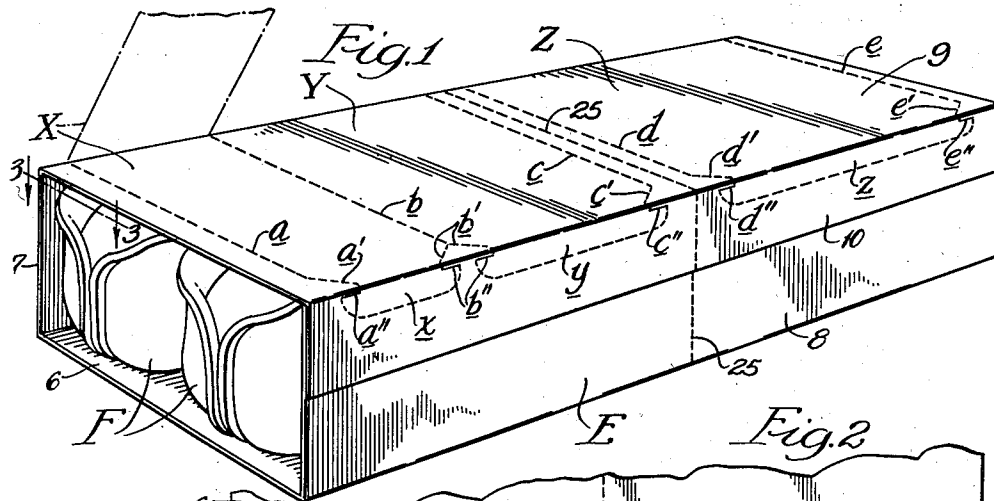
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L. BENOIT

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CARTON

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Inventor:

Leon Benoit,

*By [Signature] & [Signature]
Attorneys.*

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CARTON

Leon Benoit, New York, N. Y.

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4 Claims. (Cl. 229—51)

This invention which relates to a carton is concerned particularly with the provision of certain locks by which swingable sections in a wall of the carton, usually its top, may be secured in closed position, and by which multiple carton components may be secured against disassembly.

The swingable section lock herein disclosed may be employed advantageously with a carton of the cellular type, either of single or multi-piece construction. One of its walls, usually the top, may be pre-formed with certain weakened lines which define one or more sections adapted for swingable separation from such wall whereby to expose the carton contents. The lock thus provided for each swingable section is of integral construction, it involves no additional cost or extra operations in its production, and it is easily operated so as to secure in place the swingable section once it has been swingingly separated from the associated wall.

The present invention also includes a lock which is applicable to a carton of the filler package type, i. e., a package comprising a cellular filler slidably received within a protecting enclosure therefor, such as an open-ended tube. The locking means herein disclosed involves no change or modification whatsoever in the filler itself, which is maintained intact for use independently of the enclosure; the lock suffices, however, to retain the filler securely within its enclosing carton so as to receive protection therefrom.

These features of improvement are susceptible of embodiment in various forms and ways of which certain exemplifications are shown in the accompanying drawing in the manner following:

Figure 1 is a perspective view of a filler package type of carton in the condition which exists prior to opening of any of its cover sections;

Fig. 2 is a view of the blank from which the filler enclosure is formed;

Fig. 3 is a fragmentary detail in section taken on line 3—3 of Fig. 1;

Fig. 4 is a fragmentary perspective view looking toward one corner of the carton showing a swingable cover section locked in closed position; and

Fig. 5 is an enlarged detail in section taken on line 5—5 of Fig. 4.

In the carton shown, a filler F is slidably accommodated within an enclosure E having the general form of an open-ended tube. This enclosure (see Fig. 2) may be formed from a sheet of chip board or other suitable material which is bent along parallel lines to provide a bottom 6, a back 7, a front 8, and a top 9. As shown, the

top is provided with a flap 10 which depends along the front wall over which it extends and to which it is desirably secured as by an adhesive.

The cellular filler may be of multi-piece type or, as shown, may be of integral construction made from pulp which is molded to shape. The filler package illustrated is one which is suitable for the reception of eggs or like articles and is so dimensioned that its filler is provided with twelve cells arranged in two rows of six each. These cells are formed by the contours of the filler walls which are so configured as to define individual cells with undulating portions of the walls extended therebetween (see Fig. 3).

In order that the filler may be prevented from sliding endwise out of its enclosure, I provide a lock which, as shown, may comprise single or double tabs 15 formed in selected walls of the enclosure adapted to be struck inwardly so as to lie between cell-separating walls of the filler. To produce these double tabs H-cuts are formed in the walls of the enclosure. The tabs, when bent inwardly, will tend to remain in a position which will interfere with endwise movement of the filler within the enclosure. By the means described the filler is accordingly locked in place. Withdrawal of the filler may be accomplished in response to an endwise force of sufficient strength to produce a recession of the locking tabs. In the case of a molded filler, such as the one herein shown, the walls defining the cells undulate therebetween (see Fig. 3) in such a way as to engage at an easy angle with the locking tabs, thereby facilitating the recession of the tabs when occasion arises for the application of an endwise force for withdrawal of the filler.

Regardless of the form of enclosure used, the top or cover wall may be provided with one or more sections adapted for swingable separation whereby to expose the carton contents, or only a selected portion thereof. This feature of my invention will now be explained in detail.

As shown, the carton has its top secured in down position so that access therethrough is barred. Formed in such a top, however, are lines of severance defining one or more sections adapted to be swingingly separated therefrom. As indicated, each section is defined by spaced parallel lines of perforations which extend across the cover from one side thereof to the other. In the construction shown, three such sections X, Y and Z, each of a different size, are suggested. The section X is defined by the lines a and b, the section Y by the same line b and the line c, and the section Z by the lines d and e. These several

lines extend in parallel relationship to a point near the front upper edge of the carton where each pair converges at a' , b' , c' , d' and e' , and then extends downwardly over the carton corner to join with opposed shoulders a'' , b'' , c'' , d'' and e'' . These several shoulders are aligned just below the upper front edge of the carton, and below the shoulders each pair of perforated lines continue downwardly, and thence horizontally into meeting relation, thereby defining tabs x , y , z for the three sections X, Y and Z, respectively.

In such a construction the pre-defined sections are adapted to be separated from the carton top wall and from its depending flap except along the rear upper edge 16 of the carton where its connection therewith remains intact. Along this edge is formed the hinge lines for the three sections. It will be apparent that any one, two or three of the sections so formed may be separated from the top for swinging movement. In any carton construction employing a multiplicity of such separable sections, the user has the option of which ones he will disengage from the carton top for swinging movement preliminary to gaining access to the proximate portion of the carton interior.

By reason of convergence of each pair of perforated lines at the points marked a' , b' , c' , d' and e' , a series of bridges 20 remain upon the carton top wall (see Fig. 4). When a section has been swingingly separated, the tab at its free end may be employed to lock the section down in closed position by pressing the tab inwardly so that it lies to the inside of the front wall 8 (see Fig. 5) when the severed section is pressed down into the plane of the top. In reaching this position the opposed shoulders of the tab may slide upon the inclined edges of the two bridges until they lie therebelow to engage therewith from the underside. The swinging section is thereupon secured in down position. It may be opened up again only by forcing back the tab to a point where its shoulders may be disengaged from the confining bridges. This may be accomplished either by the finger or by the use of a thin implement, such as a knife.

In the construction shown, I have indicated a further perforated line 25 extending transversely around the carton preferably at a point midway between its two ends. This line which extends between two of the swingable sections will facilitate separation of the carton into two halves. The filler within the carton is similarly provided with a perforated or weakened line 26 whereby it will concurrently separate in the same plane. Accordingly when the carton is broken in two, there will be left in each carton half a filler of corresponding size locked therein by one of the tabs 15. The swingable sections, in the construction shown, are not affected by any separation of the carton in its entirety, since each section remains entirely free to operate the same as before.

It will be observed that the features of improvement herein disclosed are applicable to cartons of various types, with or without separable fillers, and severable or not into two or more units. In providing swingingly separable sections, I make use of a flap or strip which overlies one wall of the carton to produce at that point a two ply construction, the locking tab for each section being struck from such flap while the wall to the inside thereof remains intact to afford an abutment for the locking tab when it is inserted to the inside position shown in Fig. 5. In addition, the

lock for the slidable filler is releasable because of the curving character of the filler walls with which it engages. When such release takes place, the locking tabs are not of necessity swung back into the plane of the wall from which they are struck, but the wall itself in the region of such tabs may be outwardly bowed as required to permit endwise movement of the filler. This manner of operation is the result of employing curved cell-forming walls for the filler, the curves providing in effect cams upon which the tabs may ride when a sufficient endwise force is applied to dislodge the filler from the enclosing carton.

Another feature to be noted is the formation of separable swinging sections the last two of which are spaced apart to leave an intervening strap or web which maintains a transverse continuity for the enclosure at that point. The plane of severability for the carton and filler passes through this web or strap so that the carton is not unduly weakened. The separable sections are accordingly permitted to swing open and be closed without danger of the carton and its filler separating into two units, except when a special breaking force is applied for this purpose.

I claim:

1. In a carton produced from a sheet of resilient material, the combination of enclosing walls which comprise a cover having a depending flap in overlying relation to an adjacent vertical wall to which the flap is adapted to be secured, and connected lines of severance formed in the cover and flap defining a plurality of sections each swingingly separable from the cover and each section provided in the plane of the flap with a shouldered locking tab disposed upon the free edge of the section when swingingly separated from the cover, the vertical wall adjacent the flap being extended upwardly to approximately the line of juncture between the flap and cover, the tab tending normally to swing out toward the plane of the cover and the cover being extended inwardly for engagement with the shouldered portion of the tab when the latter is swung inwardly and disposed to the inside of the said vertical wall.

2. In a carton produced from a sheet of resilient material, the combination of enclosing walls which comprise a cover having a depending flap in overlying relation to an adjacent vertical wall to which the flap is adapted to be secured, and connected lines of severance formed in the cover and flap defining a plurality of sections each swingingly separable from the cover and each section provided in the plane of the flap with a shouldered locking tab disposed upon the free edge of the section when swingingly separated from the cover, the tab tending normally to swing out toward the plane of the cover and the cover being extended inwardly for engagement with the shouldered portion of the tab when the latter is swung inwardly and disposed to the inside of the said vertical wall.

3. In a carton produced from a sheet of resilient material, the combination of enclosing walls which comprise a cover having a depending flap in overlying relation to an adjacent vertical wall to which the flap is adapted to be secured, and connected lines of severance formed in the cover and flap defining a plurality of sections each swingingly separable from the cover and each section having converging edges at the flap with a shouldered locking tab disposed upon the free edge of the section when swingingly separated from the cover, the vertical wall adjacent the

flap being extended upwardly to approximately the line of juncture between the flap and cover, the tab tending normally to swing out toward the plane of the cover and the cover adjacent the diverging edges being extended inwardly for engagement with the shouldered portion of the tab when the latter is swung inwardly and disposed to the inside of the said vertical wall.

4. In a carton produced from a sheet of resilient material, the combination of enclosing walls which comprise a swinging cover having a depending flap in overlying relation to an adjacent vertical wall to which the cover is adapted to be

secured, lines of severance defining in the flap a tab adapted to be severed therefrom while retaining connection with the cover, the tab ends being formed to provide oppositely extending shoulders aligned just below the cover and adapted, when forced, to occupy positions to the inside of the said vertical enclosure wall, and means formed on one of the enclosure walls lying in the plane of the cover when closed adapted to engage the tab shoulders when disposed to the inside of the vertical enclosure wall aforesaid.

LEON BENOIT.