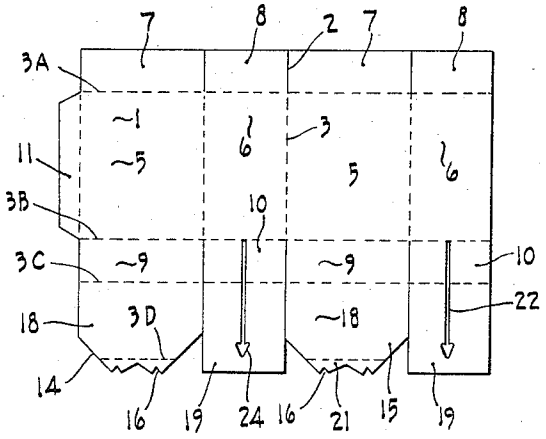
Feb. 9, 1960 C. G. LEMON 2,924,370

CARTONS

Original Filed Jan. 31, 1955

FIG. 1.



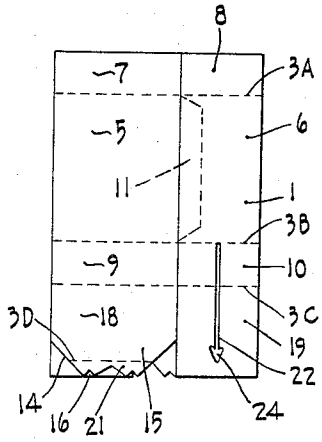


FIG. 2.

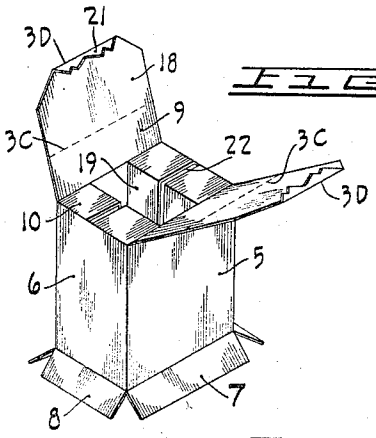


FIG. 3.

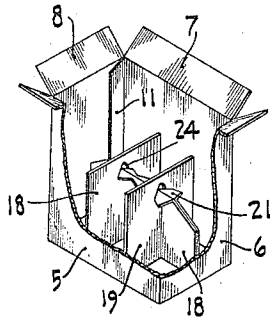


FIG. 4.

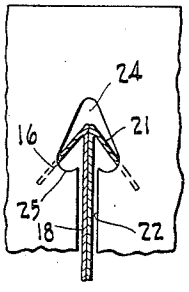


FIG. 5.

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United States Patent Office 2,924,370 Patented Feb. 9, 1960

2,924,370

CARTONS

Cecil G. Lemon, North Vancouver, British Columbia, Canada, assignor to Unipak Carton Ltd., Vancouver, British Columbia, Canada

Continuation of abandoned application Serial No. 485,120, January 31, 1955. This application July 12, 1957, Serial No. 671,594

3 Claims. (Cl. 229—28)

My invention relates to improvements in cartons.

This invention relates particularly to cartons which are formed of a single sheet of material having portions adapted to be folded to provide a bottom wall and a plurality of internal filler cells.

The object of the invention is to provide the dividing walls defining the cells of such a carton with means whereby they cannot become disaligned or form an obstruction to bottles or other articles being placed therein. Such disalignment of the walls is particularly objectionable when the carton is being loaded by machine as is usually the case.

A further object is to provide means for locking the dividing walls against relative vertical movements, so that said walls, which are buttressed against the side walls of the carton, reinforce the bottom wall of said carton and generally add strength and rigidity to the entire structure.

Referring to the accompanying drawings:

Figure 1 is a plan view of the blank from which the carton is made.

Figure 2 is a plan view of the blank folded to knock down position.

Figure 3 is a perspective view showing the initial step in forming the cells.

Figure 4 is a perspective view, partly broken away, showing the completed carton ready for filling.

Figure 5 is an enlarged detail view showing the locking tabs engaging the stops of their complementary slots.

In the drawings, like characters of reference indicate corresponding parts in each figure.

The numeral 1 indicates a blank of sheet cardboard which is vertically incised and creased as at 2 and 3 respectively and horizontally creased at 3A—3D to provide a number of interrelated portions. These portions include a pair of side walls 5 and a pair of end walls 6, each defined by the vertical creases 3 and the horizontal creases 3A and 3B. Each side wall 5 is provided with a top side closure 7, and each end wall 6 is provided with a top end closure 8, one of said side walls 5 having a tab 11 the purpose of which will be apparent hereinafter.

Each side wall 5 is provided with an extension which includes a bottom wall portion 9, located between the crease-lines 3B and 3C, a filler cell dividing wall 18, located between the crease-lines 3C and 3D, and a hingeable locking tab 21 located between the crease-line 3D and the outer extremity of said extension. It will be noted that the outer corners of each extension are removed so that the outer portion of each wall 18 and associated hingeable tab 21 serves as a tapered tongue 15. The outer edge of each hingeable tab 21 is serrated so as to provide a plurality of spaced triangular shaped notches 16 therein.

Similarly, each end wall 6 is provided with an extension which includes a bottom wall portion 10, located between the crease-lines 3B—3C, and a filler cell dividing wall 19 located between the crease-line 3C and the outer extremity of said extension. The said extensions of the end walls 6 are each provided with a centrally disposed slot 22 each of which extend from the crease-line 3B and terminates, substantially adjacent the outer extremities of the dividing wall 19, in an arrow-headed enlargement 24 having a base 25.

To complete the carton to knock down form the left side wall 5 is folded to the right to overlie the adjacent end wall and the right end wall 6 is folded to the left into contact with the tab 11 which is secured thereto by glue or other suitable means. The blanks when thus folded, see Figure 2, may be stacked for storage or shipment to the producer of the goods to be packed therein.

The user opens up the folded carton to tubular form and inverts it to complete the carton by first folding each of the portions 10 along their crease-lines 3C to dispose the walls 19 at right angles to the remainder of said portions. The free ends of the portions 10 are then thrust downwardly into the squared carton parallel with the end walls 6 (as shown in Figure 3), thus leaving the slots 22 aligned and lying in a plane midway between the side walls 5 so that the portions 10 are folded at right angles to the end walls 6 along the crease-lines 3B.

Each hingeable tab 21 is folded inwardly along the crease-line 3D so that it lies slightly at an angle to its associated dividing wall 18.

The dividing walls 18 are then each bent along the crease-line 3C and the tongues 15 thrust into the aligned slots 22. As soon as the hingeable tabs 21 enter the slots 22, frictional contact of the opposed side edges of the latter with said tabs act to bend the tabs 21 so that they lie substantially parallel with their associated dividing walls 18. However, due to the natural resiliency of the material employed, as soon as the tabs 21 enter the arrow-headed enlargements 24 of the slots, they will spring outwardly to assume their original angular position with respect to the dividing walls 18 and, in so doing, the notches 16 in the tabs will engage with the base 25 of the arrow-heads 24. The dividing walls 18 are thus held against vertical movement and are firmly supported back to back by the tabs 21 and the walls 19 against longitudinal movement, resulting in an integral filler cell structure which cannot become disaligned and which strengthens the carton as a whole.

It will be obvious that by anchoring the filler cell walls in the above described manner that the carton bottom wall will not require fastening by means of an adhesive strip and that the tabs 21 will serve as a guide for articles such as bottles being placed in the filler cells either by machine or by hand.

When the carton has been filled, the top closures 7 and 8 are folded over in the usual manner and are sealed by an adhesive strip or by stapling.

This application is a continuation of United States application Serial No. 485,120 filed January 31, 1955, now abandoned.

I claim:

1. A blank for forming a multi-cell carton having portions constituting a pair of end walls and a pair of side walls, extensions on corresponding edges of all of said walls, each of said extensions being foldable into bottom and partition sections, a slot formed in each of a first pair of said extensions, said slots each having opposed side edges extending longitudinally of said extensions from the juncture thereof with the associated walls and terminating in enlarged portions adjacent the outer ends of said extensions, and a hingeable tab provided on the outer end of each of a second pair of said extensions and normally disposed at an angle to the plane of the latter, said first pair of extensions being adapted to be bent so as to project upwardly within the

carton and said second pair of extensions being adapted to engage with said slots in said first pair of extensions and to project upwardly within the carton, both of said pairs of extensions thereby forming a bottom wall of the carton and cell partitions therein, said hingeable tabs, by slidable frictional contact with said opposed side edges of said slots when said second pair of extensions engage therewith, being bent to lie substantially parallel with said second pair of extensions, said hingeable tabs, when ceasing to be in contact with said opposed side edges of said slots and upon entering said enlarged portions, assuming the said normally angular position with respect to said second pair of extensions, thereby locking both of said pairs of extensions in mutually co-operating position, and spaced notches having opposed edges in the free end of each of said tabs, said opposed side edges of each notch being adapted to engage and hold an associated edge of each of said enlarged portions and thereby maintain said first pair of extensions in said mutually co-operating position with said second pair of extensions.

2. A blank for forming a multi-cell carton having portions constituting a pair of end walls and a pair of side walls, extensions on corresponding edges of all of said walls, each of said extensions being foldable into bottom and partition sections, a slot formed in each of a first pair of said extensions, said slots each having opposed side edges and extending longitudinally of said extensions from the juncture thereof with the associated walls and terminating in arrow-heads adjacent the outer ends of said extensions, and a hingeable tab provided on the outer end of each of a second pair of said extensions and normally disposed at an angle to the plane of the latter, said first pair of extensions being adapted to be bent so as to project upwardly within the carton and said second pair of extensions being adapted to engage with said slots in said first pair of extensions and to project upwardly within the carton, both of said pairs of extensions thereby forming a bottom wall of the carton and cell partitions therein, said hingeable tabs, by slidable frictional contact with said opposed side edges of said slots when said second pair of extensions engage therewith, being bent to lie substantially parallel with said second pair of extensions, said hingeable tabs, when ceasing to be in contact with said opposed side edges of said slots and upon entering said arrow-heads, assuming the said normally angular position with respect to said second pair of extensions, thereby locking both of said pairs of extensions in mutually co-operating position, and spaced notches having opposed side edges in the free end of each of said pair of extensions, said opposed side edges of each notch being adapted to engage and hold the base of an associated arrow-head and thereby maintain said first pair of extensions in said mutually co-operating position with said second pair of extensions.

3. A multi-cell carton of the type having a pair of end walls and a pair of side walls, extensions on corresponding edges of all of said walls, said extensions being foldable into bottom and partition sections and by the mutual bending and engagement thereof forming a bottom wall of the carton and cell partitions, a hingeable tab provided on the outer end of each of one pair of said extensions, each of said hingeable tabs being normally disposed at an angle to the plane of its associated extensions, a slot formed in each of another pair of extensions in which said one pair of extensions engage, said slots having opposed side edges and extending longitudinally of said extensions from the juncture thereof with the associated walls and terminating in enlarged portions adjacent the outer ends of said extensions, said hingeable tabs, during assembly of the carton, being in slidable frictional contact with said opposed side edges of said slots and, by such contact, being bent to lie substantially parallel with their associated extensions, said hingeable tabs, when ceasing to be in contact with said opposed side edges of said slots and upon entering said enlarged portions, assuming their said normally angular position with respect to their associated extensions, thereby locking all of said extensions in mutually co-operating position, and spaced notches having opposed edges in the free end of each of said pair of extensions, opposed side edges of each notch being adapted to engage and hold an associated edge of each of said slots and thereby maintain said extensions in said mutually co-operating position.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 2,924,370 February 9, 1960

Cecil G. Lemon

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

In the grant, lines 2 and 12, and in the heading to the printed specification, line 4, name of assignee, for "Unipak Carton Ltd." read -- Unipak Cartons Ltd. --.

Signed and sealed this 26th day of July 1960.

(SEAL)
Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patent