Sept. 11, 1956 R. J. HICKIN 2,762,552

RECLOSABLE CARTON

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Fig. 1.

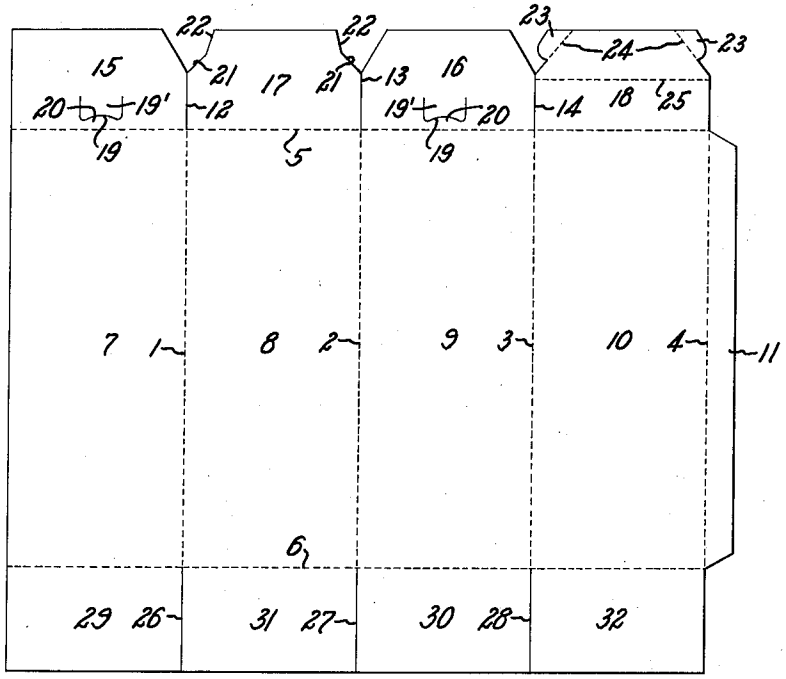
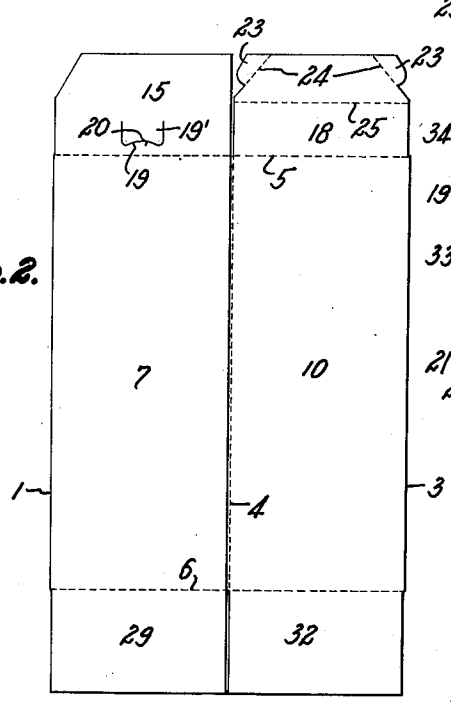


Fig. 2.



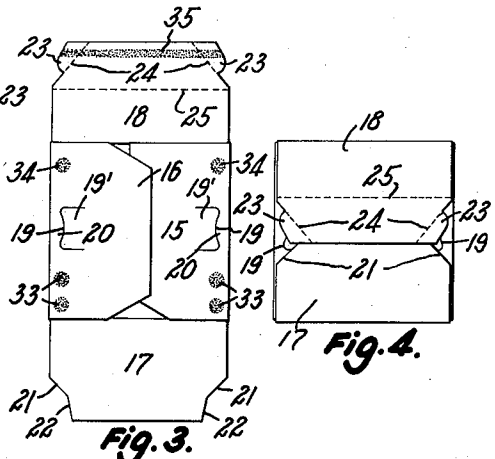


Fig. 3.

Fig. 4.

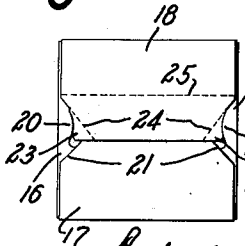


Fig. 5.

INVENTOR

Robert J. Hickin

BY D. N. Finckel Jr.

ATTORNEY

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RECLOSABLE CARTON

Robert J. Hickin, Seville, Ohio, assignor to The Ohio Boxboard Company, a corporation of Ohio

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1 Claim. (Cl. 229—38)

This invention relates to paperboard cartons and it has particular reference to a carton of the general type having and end closure formed of a plurality of relatively folded end flaps initially secured in superposed closed condition by sealing means of a frangible or separable nature which will permit ready access to the contents of of the carton without mutilating or destroying the end flaps in order that such flaps may subsequently be refolded to closed condition to protect the unused portion of the carton contents.

One object of the invention is to provide certain of the end closure flaps with means whereby, after being broken apart and the carton thus opened, they may be re-folded and interengaged to reclose the carton end and maintain it in closed condition. Primarily, the carton is designed for the packaging of the now-prevalent four, separately wrapped packages of crackers, and this reclosable feature is advantageous in serving to retain the unused portion of the carton contents in proper and adequately protected condition within the carton.

Another object of the invention is to provide means for securing the end flaps in reclosed condition which is much simpler and more easily operated than somewhat similar means now known.

A further object is to provide such reclosing means as will make necessary a relative minimum of manufacturing operations for their production in the carton blank, thus to effect an economy in manufacturing cost and selling price.

The invention comprises a paperboard carton having four side walls preferably in rectangular arrangement, each of said side walls being provided at its opopsite ends with end closure flaps which, when relatively folded into predetermined juxtaposition, will furnish end closures for the carton, the flaps forming the closure for one end preferably being relatively inseparably secured so as to provide a permanent bottom end, and the flaps forming the closure at the other end being so folded as to provide two inner flaps connected with two opposite side walls and two outer flaps connected with the other two opposite side walls, said outer flaps being frangibly or separably secured by adhesive to underlying portions of the inner flaps, and one of said outer flaps having a free edge portion overlying the free edge of the other outer flap and frangibly or separably secured thereto by adhesive to provide a normally sealed top, the overlying portion of such outer flap being provided on its opposite lateral edges with locking tabs, and each of said inner flaps being provided with a normally closed locking slit providing a locking lip, such tabs and lips being engageable, after the carton top has been opened by separation of the outer flaps at their adhesive connections with each other and with the inner flaps, and the flaps have again been closed, to hold the properly reassembled flaps in desired reclosed, but reopenable, condition, all as will be described hereinafter more fully and finally claimed.

In the accompanying drawing illustratng the invention, in the several figures of which like parts are similarly designated,

Fig. 1 is a plan view of the blank from which the carton of the invention is constructed, viewed from its inner face,

Fig. 2 shows the blank for Fig. 1 folded flat and adhesively secured in desired tubular form,

Figure 3 is an end view of the squared-up carton body with the inner top end flaps properly folded into closed condition and the outer top end flaps folded outward in the interest of clarity.

Fig. 4 is a view similar to Fig. 3, but with the closing and sealing of the top inner and outer end flaps completed, and

Fig. 5 is a view similar to Fig. 4 but illustrating the interlocking of the top end flaps after they have been broken apart for access to the carton contents and reclosed.

As shown in Figure 1, the blank for forming the carton of the invention comprises a single integral sheet of appropriate paperboard material provided with spaced parallel vertical folding scores **1**, **2**, **3** and **4**, and spaced parallel longitudinal folding scores **5** and **6**, defining four substantially similar rectangular side walls **7**, **8**, **9** and **10** and a glue lap **11**.

Bordering the upper longitudinal folding score **5** and separated from each other by cuts **12**, **13** and **14** in substantial alignment with the folding scores **1**, **2** and **3**, are the top end inner closure flaps **15** and **16**, and the top end outer closure flaps **17** and **18**. The inner flaps **15** and **16** are provided with similar slits **19** bordering depressible or displaceable portions **19'** and providing locking lips **20**, the outer flap **17** has its free edge reduced in lateral dimension by the angular cuts **21—22**, and the outer flap **18** is provided adjacent to its free edge with laterally oppositely disposed offstanding locking tabs **23**. Preferably, although not necesarily, bending scores **24** may be provided between the locking tabs **23** and the body of the flap **18** to facilitate their use as will later be pointed out, and the body of this flap **18** may be provided with a substantially medial transverse bending score **25** for a purpose hereinafter appearing.

Bordering the lower longitudinal folding score **6** and separated by cuts **26**, **27** and **28** in substantial alignment with the folding scores **1**, **2** and **3** are the similar bottom closure flaps **29**, **30**, **31** and **32**.

As furnished to the carton user the blank is flat-folded upon the vertical folding scores **1** and **3** so that the free edge of the side wall **7** overlies the glue lap **11** and is adhesively secured thereto to form the carton body in tube form, Fig. 2.

Referring to Figs. 3 and 4, it will be seen that when the carton is to be filled with the commodity to be packaged, such, for example, as the familiar four one-quarter pound individually wrapped packages of crackers, the body will be squared up so that its opposite side walls **7**, **9** and **8**, **10** are respectively parallel, and then the bottom closure flaps **29**, **30**, **31** and **32** are folded inwardly in pairs from their respective opposite side walls **7**, **9** and **8**, **10** into proper overlapping arrangement and adhesively secured.

With the carton thus squared up and its bottom closed, it is filled with the commodity to be packaged and thereafter the top end is closed in substantially the following manner. The inner end flaps **15** and **16** are folded inwardly with spots **33** and **34** of adhesive applied to them either before or after such folding (Fig. 3), then the outer end flap **17** is folded inwardly flat against the already in-folded inner flaps **15** and **16** with its inner face in engagement with the spots **33** of adhesive, and thereafter the outer end flap **18** is folded inwardly over upon the inner end flaps **15** and **16** into contact with the spots **34** of adhesive and with its free edge portion overly-

ing the free edge portion of the previously in-folded end flap **17** and secured thereto by a strip application **35** of adhesive which may previously have been applied either to the inner face of the edge portion of the flap **18**, as shown in Fig. 3, or to the outer face of the free edge portion of the flap **17**. Closure, and frangible or separable sealing of these top end flaps, will thus have been completed, as shown in Fig. 4, when the parts are maintained by application of pressure in thus assembled condition for a time sufficient to enable the adhesive to set.

When access to the contents of the carton is desired, the top outer flap **18** is grasped at its free edge and raised to break the adhesive seal **35** with the underlying portion of the other outer flap **17** and is then further raised to break its seal at the spots **34** of adhesive and free it from the inner end flaps **15** and **16**. It will be noted that when the bending score **25** is provided, as shown, this raising and freeing of the top outer flap **18** may be accomplished without giving the flap a tendency to curl, thus maintaining its edge portion which carries the locking tabs **23** in desired flat and undistorted condition.

After the top outer flap has been turned up, the other outer flap **17** is raised to break the seal at the spots of adhesive **33** to free it from the inner end flaps **15** and **16**, and thereafter these inner end flaps are raised to thus give full acess to the carton contents.

Reclosure of the carton end is accomplished by returning the four end flaps to their original positions over the end of the carton, and then, by application of pressure to the locking tabs **23**, which serves to depress the underlying portions **19'** of the inner end flaps **15** and **16**, these locking tabs will be caused to snap under, and be engaged by, the locking lips **20** to thus maintain all of the flaps, **15**, **16**, **17** and **18** in proper desired end closing assembly. It will be apparent that provision of the bending scores **24** will, when present, facilitate snap depression of the locking tabs **23** beneath the locking lips **20**.

Instead of accomplishing introduction of the locking tabs **23** beneath the locking lips **20** by application of pressure, as just described, the desired engagement of these members may be effected by a slight lateral distortion of the carton walls which will make it possible to first slidingly insert one of the locking tabs **23** beneath its complemental locking lip **20**, and then the other. Whichever mode of engagement of these parts is employed, it will be apparent that the reduction in lateral dimension of the underlying outer end flap **17** as furnished by the cuts **21**—**22** will facilitate such engagement.

Obviously, the carton may be reopened and reclosed as often as is necessary until its contents are exhausted.

It is known that this general type of flap retaining means for reclosable cartons is not broadly novel, but it is not known that, prior to the present invention, one, only, of the outer end flaps has been provided with means for engagement with complemental means of both of the inner end flaps for maintaining all of these end flaps in reclosed condition; and, furthermore, no embodiment of a similar flap-interengaging means is known wherein the specific details of the structure of the present invention are included.

It will be understood that strip gluing may be substituted for the spot gluing, and spot gluing for the strip gluing. Thus, reversals of the gluing modes may be employed or all of the adhesive unions of the flaps may be of either the spot glue or strip blue type.

Various changes and modifications are considered to be within the principle of the invention and the scope of the following claims.

What I claim is:

A reclosable end structure for paperboard cartons, comprising, in combination with the four side walls of the carton, four end closure flaps arranged in pairs connected upon folding scores with opposite side walls of the carton at one end thereof, one of said pairs furnishing two outer end flaps and the other pair furnishing two inner end flaps for arrangement beneath the said outer end flaps, said inner end flaps having overlapping free end portions and each of them being provided with slit means to form a depressible portion and a locking lip in the plane of the flap and closely adjacent to its folding score at its respective side wall, said outer end flaps being of an area greater than one-half the area of the carton end to thus provide for their substantially complete coverage of the inner end flaps and furnish an overlapping arrangement of their adjacent free end portions when they are folded over upon said inner end flaps, the portion of the inner one of said outer end flaps which underlies the overlapping portion of the outer one of said outer end flaps being cut away to clear said lip means, and the overlapping portion of the outer one of said outer end flaps being provided with locking tabs offstanding from its lateral edges and normally overlying but serving for engagement beneath said locking lips, the overlapping portions of said outer end flaps being adhesively secured together by a glue seam, and the overlying outer end flap being provided inwardly of its free end and of said glue seam and said locking tabs with a transverse folding score, said folding score making possible manipulation of the overlying outer end flap in initially opening the carton to effect the disengagement of said outer end flaps at said glue seam without subjecting the free end of said overlying outer end flap to curling influence, thus providing for proper restoration of all of said end flaps and their retention in interengaged relation by said tabs and lips to reclose the end of the carton.

References Cited in the file of this patent

UNITED STATES PATENTS

634,646	Knobelock	Oct. 10, 1899
2,053,857	Weiss	Sept. 8, 1936
2,167,917	Vogt	Aug. 1, 1939
2,276,820	Bonfield	Mar. 17, 1942
2,330,521	Scheide	Sept. 28, 1943
2,373,423	Shina	Apr. 10, 1945