Feb. 27, 1962 R. GUYER 3,022,931

EASY OPENING CARTON

Filed June 11. 1956 2 Sheets-Sheet 1

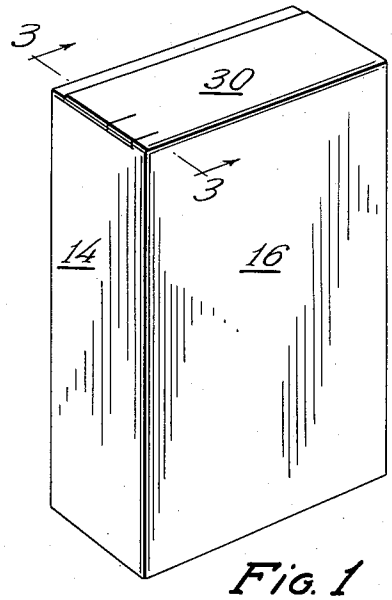


Fig. 1

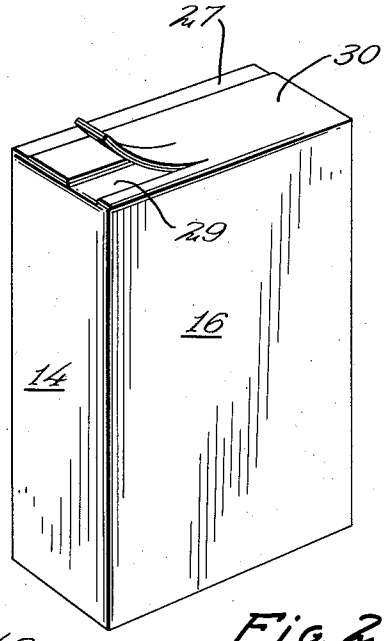


Fig. 2

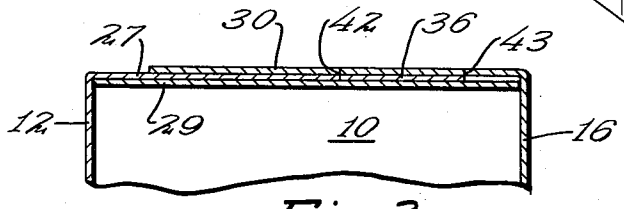


Fig. 3

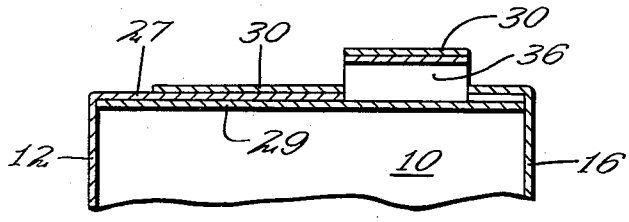


Fig. 4

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EASY OPENING CARTON

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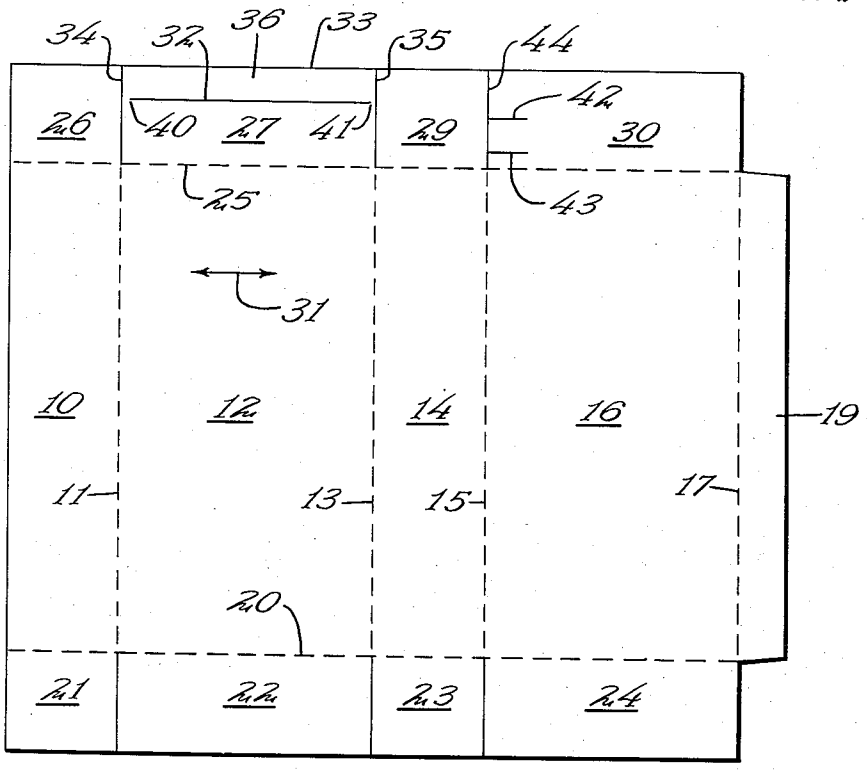


Fig. 6

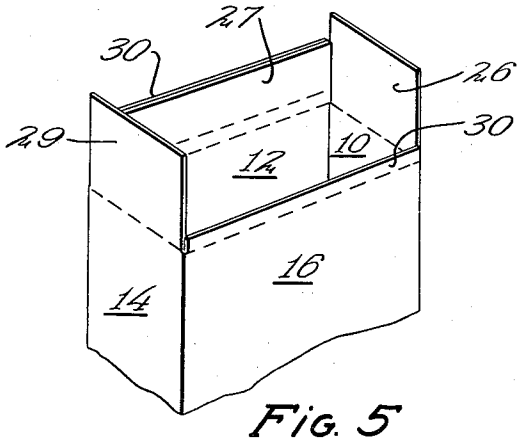


Fig. 5

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EASY OPENING CARTON

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1 Claim. (Cl. 229—51)

This invention relates to an improvement in easy opening cartons and deals particularly with a sealed end carton which is simple to open.

Many products require an enclosing carton for properly protecting the product. Most cartons which are of the ordinary sealed end type are somewhat difficult to open without the use of special tools. For example, it is often necessary to cut the top from the carton with a knife or to pry the various closing flaps apart with a flat bladed instrument. It is the object of the present invention to eliminate this difficulty.

A feature of the present invention resides in the provision of an economical carton which will properly contain a product and yet which may be opened without the use of tools. In order to accomplish this result, one of the larger closing flaps at one end of the container is provided with a weakened line of separation extending parallel to the free edge of the flap and parallel to the fold line connecting this flap to its side wall. The opposite closing flap, which folds into surface contact with the first mentioned larger closing flap and which is adhered thereto in the operation of sealing the carton, is provided with a pair of short cut lines extending into a side edge of this flap. One of these short cut lines is arranged to coincide with the free edge of the first mentioned larger closing flap while the other of the short cut lines is designed to substantially coincide with the weakened line of separation. When the two flaps are adhered in superimposed relation, the carton closure may be opened by grasping the double thickness portions of the two larger flaps between the short cut lines in the uppermost of these flaps. By pulling upwardly, a strip of paperboard is torn away across the top of the carton so that the contents of the carton are exposed.

A feature of the present invention resides in the economy of the construction. The flaps forming the closure are preferably narrower than the width of the end wall panels of the carton so that when the two larger flaps are folded into superimposed relation, each of these larger flaps terminates short of the plane of the opposite side wall panel. Thus, the intermediate portions of the larger flaps overlap and the removable portion of the closure is spaced from the fold lines connecting both of the larger flaps to their respective side walls.

An added feature of the present invention resides in the provision of a carton formed of paperboard having a definite grain direction such as paperboard formed on a cylinder machine. The grain direction runs across the side wall panels and accordingly, across the closure flaps connected thereto. As a result the grain extends longitudinally of the weakened line of separation and of the short cut lines in the opposite flap. This is important as the strip defined between the weakened line of separation and the free edge of this flap can be pulled through the unweakened portion of the upper flap, the paperboard tearing along the grain.

A further feature of the present invention resides in the provision of a carton having a tear strip formed in the lower of a pair of superimposed flaps and defined by a weakened line of separation extending parallel to the fold line connecting this flap with its side wall. The weakened line of separation preferably comprises a cut line extending virtually across the flap from one side edge to the other, but terminating sufficiently far from the side edges so that the tear strip will fold with, and be supported by, the remainder of the flap. As a result when the double thickness portion of the two flaps is grasped and separated from the remainder of the flaps, the uncut portion of the lower flap is broken during the initial pull. Thereafter the strip forming a part of the lower flap is separate from the remainder of this flap and may be pulled upwardly through the upper lamination without difficulty.

These and other objects and novel features of my invention will be more clearly and fully set forth in the following specification and claim.

In the drawings forming a part of my specification:

FIGURE 1 is a perspective view of the carton in sealed position.

FIGURE 2 is a view similar to FIGURE 1 showing the carton partially opened.

FIGURE 3 is a cross sectional view through the top of the carton in enlarged form showing the arrangements of parts therein.

FIGURE 4 is a view similar to FIGURE 3 showing the tear strip partially removed.

FIGURE 5 is a perspective view of the open carton.

FIGURE 6 is a diagrammatic view of the blank from which the carton is formed.

The carton blank is constructed as best illustrated in FIGURE 6 of the drawings. In the particular arrangement illustrated the blank includes an end wall **10** which is foldably connected along the fold line **11** to a side wall panel **12**. The wall panel **12** is foldably connected along the fold line **13** to an end wall **14**. The end wall **14** is connected by a fold line **15** to a side wall panel **16**. The side wall panel **16** is foldably connected along a fold line **17** to a glue flap **19**. The fold lines **11**, **13**, **15** and **17** are preferably parallel.

The lower edges of the various wall panels are foldably connected along a fold line **20** to bottom closing flaps, a new suitable type. Such closing flaps **21**, **22**, **23** and **24** are foldably connected to the wall panels **10**, **12**, **14** and **16** respectively.

The top closure of the carton is formed by closing flaps hingedly connected to the upper edges of the wall panels along a fold line **25** which is preferably parallel to the fold line **20**. Closing flaps **26**, **27**, **29** and **30** are connected to the wall panels **10**, **12**, **14** and **16** respectively. It will be noted that the flaps described are slightly shorter in length than the width of the end wall panels **10** and **14**. In other words, when the flaps **27** and **30** are folded down into superimposed relation, they overlap but the ends of these flaps terminate short of the planes of the opposite wall panels. This arrangement is provided in the interests of the economy and also to properly position the tear strip in a manner which will later be described.

The carton is formed with the grain of the paperboard extending in the direction of the arrow **31**. The paperboard tears more easily in a direction parallel to this arrow **31** than across the grain.

The flap **27** is provided with a weakened line of separation **32** which extends parallel to the free edge **33** of this flap and also parallel to the fold line **25** connecting the flap **27** to the wall panel **12**. In preferred form the weakened line of separation **32** comprises a cut line extending completely through or virtually through the paperboard, the cut line terminating just short of the side edges **34** and **35** of the flap **27** so that the portion **36** of this flap, which is outwardly of the cut line **32**, is connected to the remainder of the flap by short connecting areas **40** and **41**. These connecting areas are of sufficient size to hold the outer portion of the flap in a common

plane with the remainder of the flap during the handling of the carton and during the closing operation thereof.

The flap **30** is provided with a pair of relatively short spaced cut lines **42** and **43** which extend parallel to the fold line **25** connecting the flap **30** to the wall panel **16** and extending in right angular relation to the edge **44** of the flap **30**. These cut lines **42** and **43** are spaced apart a distance equal to the distance between the weakened lines of separation **32** and the free edge **33** of the flap **27**. The cut lines **42** and **43** are also positioned to substantially coincide with the weakened line **32** and the flap edge **33** when the flaps are in carton closing position.

The carton is formed in the usual manner by adhering the glue flap **19** in overlapping relation with the wall panel **10** to form a tubular body. When the carton is used it is expanded into tubular form and one end of the carton is closed by securing the closing flaps in superimposed relation. For example, if the lower end is first closed, the flaps **21** and **23** are folded into a common plane. One of the larger flaps such as the flap **22** is folded into surface contact with the flaps **21** and **23** and the flap **24** is then folded into overlapping relation with the flap **22** and is adhered in surface contact therewith.

After the carton has been filled, the other end of the carton is sealed. Either end may comprise the first sealed end. Enclosing the upper end, the flaps **26** and **29** are folded into a common plane and the larger flap **27** is folded to overlie the flaps **26** and **29**. The flap **30** is next folded to overlie the flap **27** and is adhered in surface contact therewith. When sealed the carton appears as indicated in FIGURE 1 of the drawings, the flaps being in the relative relation illustrated in FIGURE 3 of the drawings.

When it is desired to open the carton, the double thickness portion formed by the overlapping flaps **27** and **30** between the short cut lines **42** and **43** together with the outer strip portion **36** of the flap **27** is grasped and pulled upwardly. This upward force breaks the area of attachment **41** between one end of the flap portion **36** from the remainder of the flap **27** and permits the double thickness area between the short cut lines to be pulled upwardly. By continuing this upward pull in the manner shown in FIGURE 2 of the drawings, the strip portion **36** of the flap **27** is pulled through the flap **30**, this flap tearing along lines which are extensions of the short cut lines **42** and **43**.

After the tear strip portion **36** and the portion of the flap **30** to which it is adhered are separated from the carton, the carton flaps are free to be opened into the position illustrated in FIGURE 5 of the drawings thus exposing the carton contents for removal. This type of opener is normally used on cartons containing goods which are dispensed entirely at one time so that reclosing of the carton is not required. However, if the carton must be reclosed, the flaps **26**, **29** and **27** close the major portion of the opening.

In accordance with the patent statutes, I have described the principles of construction and operation of my easy opening carton, and while I have endeavored to set forth the best embodiment thereof, I desire to have it understood that obvious changes may be made within the scope of the following claim without departing from the spirit of my invention.

I claim:

An easy opening carton including tubularly arranged side and end walls, and a closure at one end of said walls including flaps foldably connected to said side and end walls and folded into substantially right angular relation thereto, the closing flaps on said end walls being folded into a common plane, the first side wall closing flap folded to overlie said end wall closing flaps and having a single weakened line of separation extending across the side wall closing flap parallel to, and spaced from, the free edge of said first side wall flap and parallel to, and substantially coextensive with, the line of fold connecting said side wall flap to its side wall, the remaining side wall flap overlying said first named side wall flap and adhered in surface contact thereto, and short cut lines extending into a side edge of said remaining side wall flap at right angles thereto, said short cut lines substantially coinciding with an end of said weakened line of separation and the free edge of said first side wall flap, respectively, said first side wall flap terminating with its free edge spaced from the fold line connecting said remaining side wall flap to its side wall providing a space between the end wall closing flaps and the remaining side wall flap adjoining the free edge of said first named side wall flap, whereby the engagement of the free edge of the first side wall flap is facilitated.

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