

[72] Inventor **Josie T. Massengill**
407 Luce Ave., Ukiah, California 95482
 [21] Appl. No. **746,561**
 [22] Filed **July 22, 1968**
 [45] Patented **Nov. 10, 1970**

3,366,304 1/1968 Peckar et al. 229/37X
 3,459,358 8/1969 Adams 229/87(M)UX
 2,251,283 8/1941 Johnson 229/51(IS)UX
 2,608,341 8/1952 Eckman 229/51(IS)UX
 3,116,868 1/1964 Lazure 229/51

FOREIGN PATENTS

369,441 3/1932 Denmark 229/51

Primary Examiner—Joseph R. Leclair
Assistant Examiner—Steven E. Lipman
Attorney—Eckhoff and Hoppe

[54] **SINGLE WALL REDUCIBLE CARTON MADE FROM A SPECIFIC BLANK WHICH PREVENTS THE LOSS OF SUBSTANTIAL MATERIAL**
2 Claims, 7 Drawing Figs.

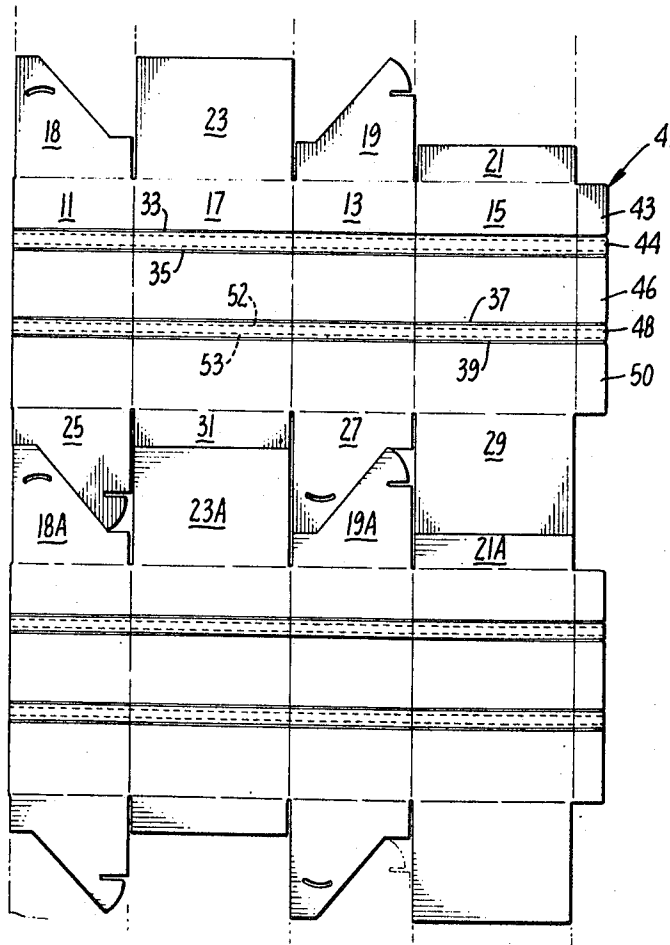
[52] U.S. Cl. 229/51,
 206/44.12, 206/56, 229/38
 [51] Int. Cl. B65d 5/54,
 B65d 5/08
 [50] Field of Search 206/44.12,
 45.12, 46(Rall), 56(A3); 220/Bs; 229/51, 51(BP),
 51(Div), 51(AS), 51(IS), (MB), 37, 38

References Cited

UNITED STATES PATENTS

3,257,068 6/1966 Wright 229/14(BA)X
 3,291,372 12/1966 Saidel 229/14X

ABSTRACT: A single-wall, collapsible carton is provided having two or more tear strips which can be removed to provide a carton of smaller size. In accordance with the invention, staggered end flaps are employed so that there is substantially no wastage in cutting carton blanks from a continuous web of material.



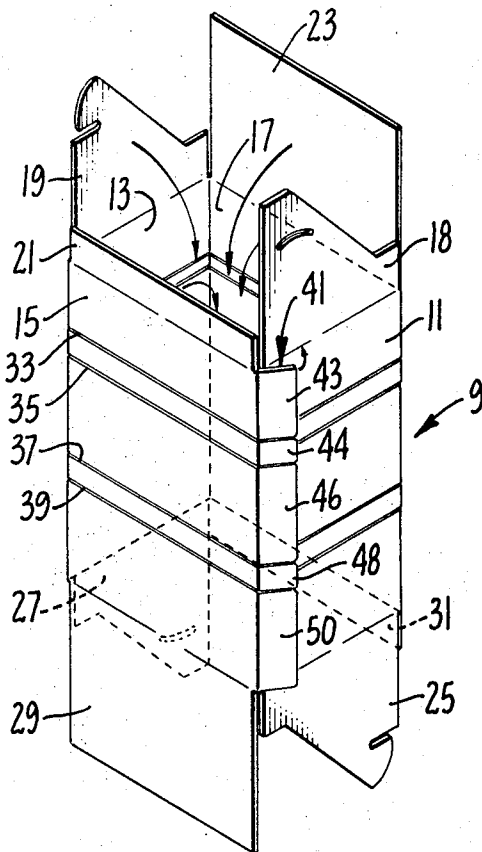


FIG. 1.

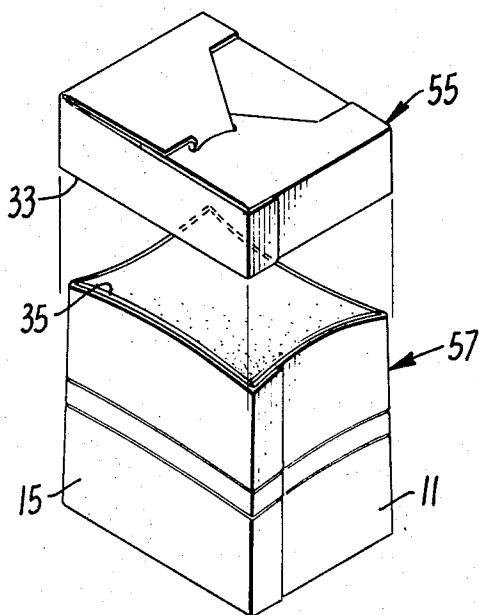


FIG. 3.

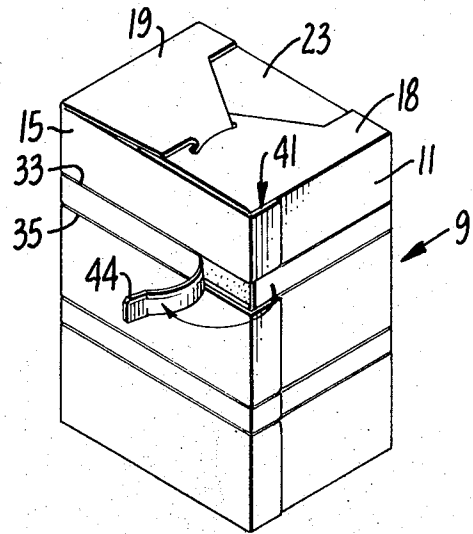


FIG. 2.

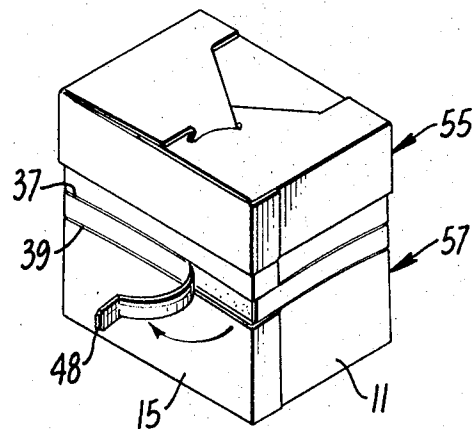


FIG. 4.

INVENTOR
 JOSIE T. MASSENGILL
 BY *Eckhoff and Hoppe*
 ATTORNEYS

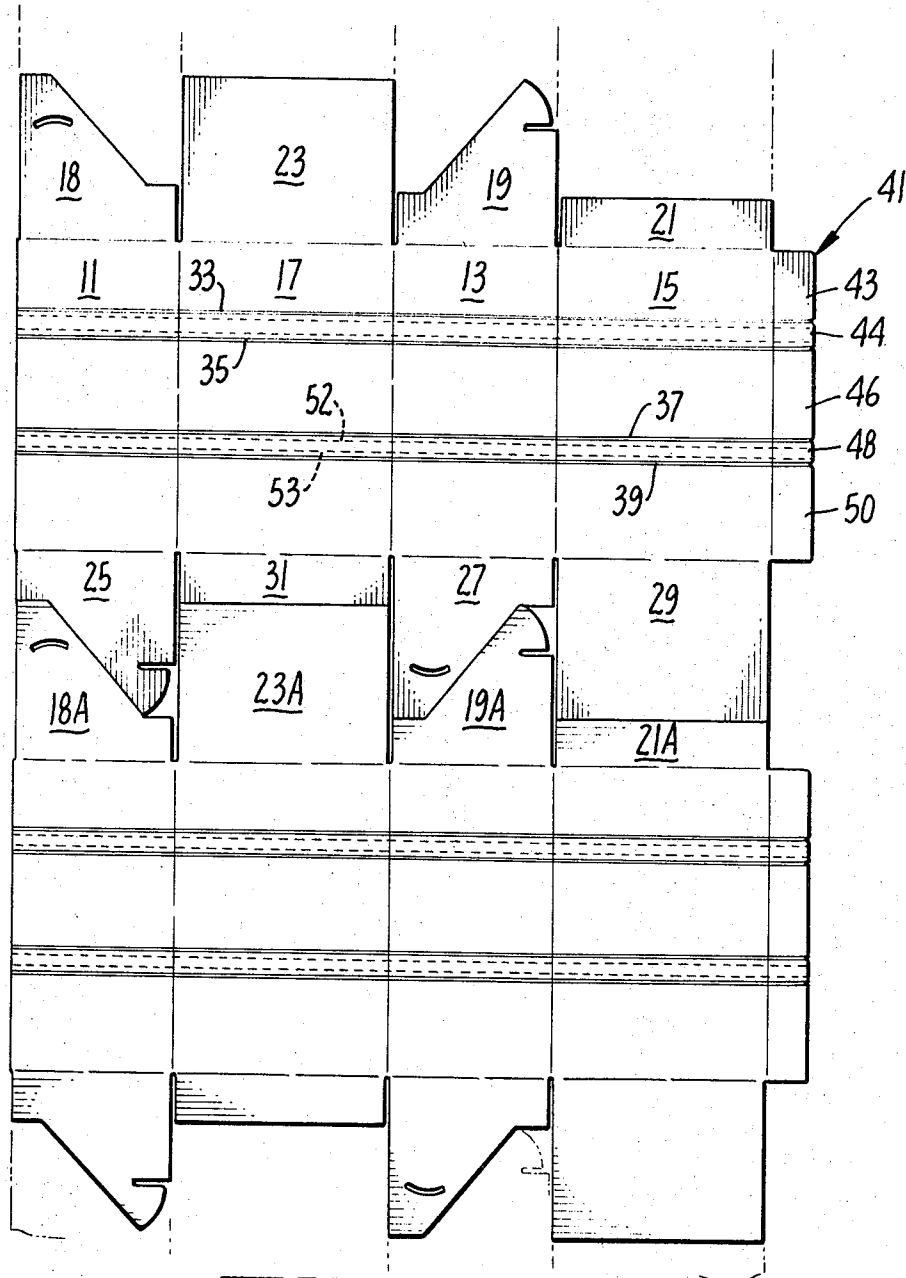


FIG. 5.

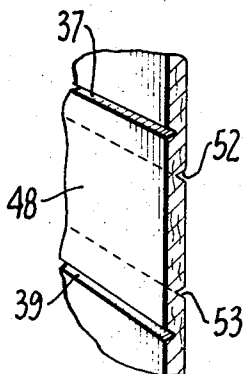


FIG. 6.

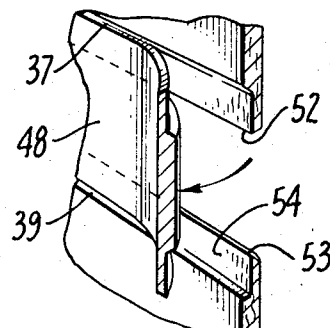


FIG. 7.

INVENTOR.
JOSIE T. MASSENGILL
BY *Eckhoff and Hoppe*
ATTORNEYS

SINGLE WALL REDUCIBLE CARTON MADE FROM A SPECIFIC BLANK WHICH PREVENTS THE LOSS OF SUBSTANTIAL MATERIAL

SUMMARY OF THE INVENTION

The present invention relates to a single-wall carton made of cardboard or similar stock which is reducible as the contents of the carton are used up. The carton of the present invention is primarily designed for use with ice cream but it will be obvious it can be used with any commodity.

When a carton of ice cream or the like is partially used, it occupies an undue amount of space in the freezer and it is highly desirable to provide a carton which occupies a minimum amount of storage space.

Therefore, it is an object of the present invention to provide a carton with easily detachable sections so that as the contents are used up, the carton can be reduced to a smaller size. This is desirable not only from the standpoint of occupying a minimum amount of space in the freezer but it also serves as a visual indicator which gives a visual signal to the housewife that the contents of the package are about used up and alerts her to reorder. Further, the amount of air within the carton is greatly reduced which tends to preserve the contents of the partially used carton.

Reducible cartons have been proposed in the past but these have used a large amount of cardboard since it has heretofore been considered necessary to provide a double wall thickness of cardboard in such cartons to prevent leakage through the perforations.

It is therefore another object of the present invention to provide a single-wall carton which is reducible as the contents are used up.

Another object of the invention is to provide a single-wall carton which is leakproof, particularly along the lines where the carton will be ultimately severed.

Still another object of this invention is to provide a carton having novel end flaps whereby a plurality of cartons can be cut from a web of stock with substantially no loss of material between carton blanks.

Other objects will be apparent from the balance of the specification.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a carton embodying the invention prior to filling.

FIG. 2 is a perspective view of a filled carton showing the method by which one of the tear strips can be removed.

FIG. 3 is a perspective view of the carton showing the method which the carton can be reassembled in reduced form.

FIG. 4 is a view, similar to FIG. 2, showing a carton which has been partially reduced and with the second tear strip being removed so it can be further reduced.

FIG. 5 is a plan view of a web showing two adjacent cartons being cut from the web.

FIG. 6 is an enlarged partial sectional view of the wall of the carton showing the method of staggering the partial cuts in the carton wall.

FIG. 7 is a view similar to FIG. 6 showing how the tear strip separates from the body of the carton.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

The carton of the present invention is generally designated 9 and has sidewalls 11 and 13 and end walls 15 and 17. The walls have respective top flaps 18, 19, 21 and 23 at the top thereof and corresponding respective flaps 25, 27, 29 and 31 at the bottom thereof. Extending around the periphery of the carton are a first pair of parallel partial cuts 33 and 35 and a second set of parallel partial cuts 37 and 39. Extending from the side 15 is a broad side flap generally designated 41 which is divided by the partial cuts referred to into tabs 43, 44, 46, 48 and 50.

The structure of the partial cuts is more explicitly shown in FIGS. 6 and 7. Thus, the partial cuts 37 and 39 as is shown in

FIG. 6 are continuous cuts which go about halfway through the walls. Spaced inwardly therefrom and on the opposite side are mating offset cuts 52 and 53 which also extend through about half the thickness of the wall. These offset cuts eliminate the possibility of leakage.

In assembling the carton, the tabs 43, 46 and 50 would normally be glued or otherwise suitably fastened with adhesive to the wall 11 but the tabs 44 and 48 would be free. With these tabs glued in this manner, the carton can be in a flattened form but readily assembled, filled and closed by regular carton-filling machinery as is well known to those skilled in the art. After the carton has been brought from its flat form, as is usual in shipment, to the form shown in FIG. 1, flap number 29 is then turned inwardly and the flap 31 is then turned on top of it. Since the flap 29 is substantially the same size as the opening of the carton, this substantially seals the end and then the flaps 27 and 25 are successively closed, effectively sealing the lower end of the carton. In this form, the carton can be filled and then the top is closed following the same sequence of operations as was described in conjunction with the bottom i.e. 23, 21 and then 18 and 19.

The carton is then in substantially the form shown in FIG. 2. The top flaps can be opened in known manner for the initial removal of a portion of the contents and when the contents get below the line 35, one can then peel back tab 44 which will open the carton on the partial cut lines 33 and 35. This operation is shown in enlarged form in FIG. 7 and as can be seen, a neat tear is produced since the partial cut lines 37 and 52 as well as 39 and 53 are close to each other and the carton has little strength with respect to layer-to-layer separation as at 54. At this time, the material between the partial cuts 33 and 35 is pulled completely out and discarded, leaving a top designated 55 and a bottom 57. By partly distorting the walls of the bottom 57 inwardly as is shown in FIG. 3, the top 55 fits snugly over fresh edges of 57 making the carton into smaller form, resulting in the structure shown in FIG. 4. When the contents have been reduced below the cut line 39, one can then grasp the tab 48, as is shown in FIG. 4 and pull it off, keeping only that portion of the carton which was shown below partial cut line 39 and above partial cut line 33 so that the carton can be now reclosed to even smaller form.

Although two pairs of partial cut lines have been shown so that the carton can be reclosed from its initial size to two smaller sizes by pulling out the tear strips, it is obvious that only a single pair of tear lines may be provided so the carton would have one smaller size than the original or that more than two pairs of lines might be provided for cartons having any desired number of reclosable sizes as the contents were used.

As has been mentioned above, one of the features of the carton of the present invention is that it utilizes a minimum amount of cardboard in its construction and waste is virtually eliminated. This feature is shown in FIG. 5 where two adjacent blanks for forming the carton of the present invention are illustrated. In this FIG., two adjacent blanks are being shown cut from a web of material. In the upper blank the sides and flaps have been given the designation previously employed while the differentiate, the next adjacent blank has been provided with matching numbers but with the suffix A. Thus, referring to panel 11, it will be seen that there is a generally triangular flap 18 at the top thereof and a generally triangular flap 25 at the bottom thereof which are mirror images of each other i.e. the triangles face in alternating directions. In this manner, only a single cut need be made to sever the blank between flap 25 and its mate on the next adjacent flap 18A. It will be seen that the same relationship exists between the flap 27 and the next adjacent flap 19A. Further, it will be seen that the short and long flaps alternate so that these too can be severed with a single cut, not wasting material. Thus, short flap 31 mates with long flap 23A while long flap 29 mates with short flap 21A so that again there is no wastage of material.

Although certain specific embodiments of this invention has been shown, it will be understood that these are for illustrative

3

purposes only and that many variations can be made in the exact structure described without departing from the spirit of this invention.

I claim:

1. A carton formed from a blank cut from a web, said blank having a first end and a second end, each of said ends having first, second, third and fourth flaps thereon, with alternate flaps of one end having a generally right-triangular configuration while the corresponding flaps of the other end have a complimentary right-triangular configuration, and with long and short flaps alternating therewith, where each said ends have both a long and a short flap, and where a long flap on one side has a corresponding short flap on the other side, whereby

4

adjoining blanks can be cut from the web without loss of material between the flaps on adjoining blanks.

2. A carton in accordance with claim 1 wherein:

- a. said carton has a generally rectangular configuration;
- b. the walls of said carton being made of a single layer of cardboard;
- c. two parallel, closely spaced, continuous partial cuts extending around the periphery of the carton; and
- d. a tab extending from that portion of the carton between said cuts, whereby said tab can be pulled, separating the carton along said cuts, producing two carton pieces which can be telescoped to provide a carton of reduced height.

15

20

25

30

35

40

45

50

55

60

65

70

75