Feb. 1, 1966 L. R. STANLEY 3,232,480

SELF-DISPENSING PACKAGE

Filed April 2, 1962 3 Sheets-Sheet 1

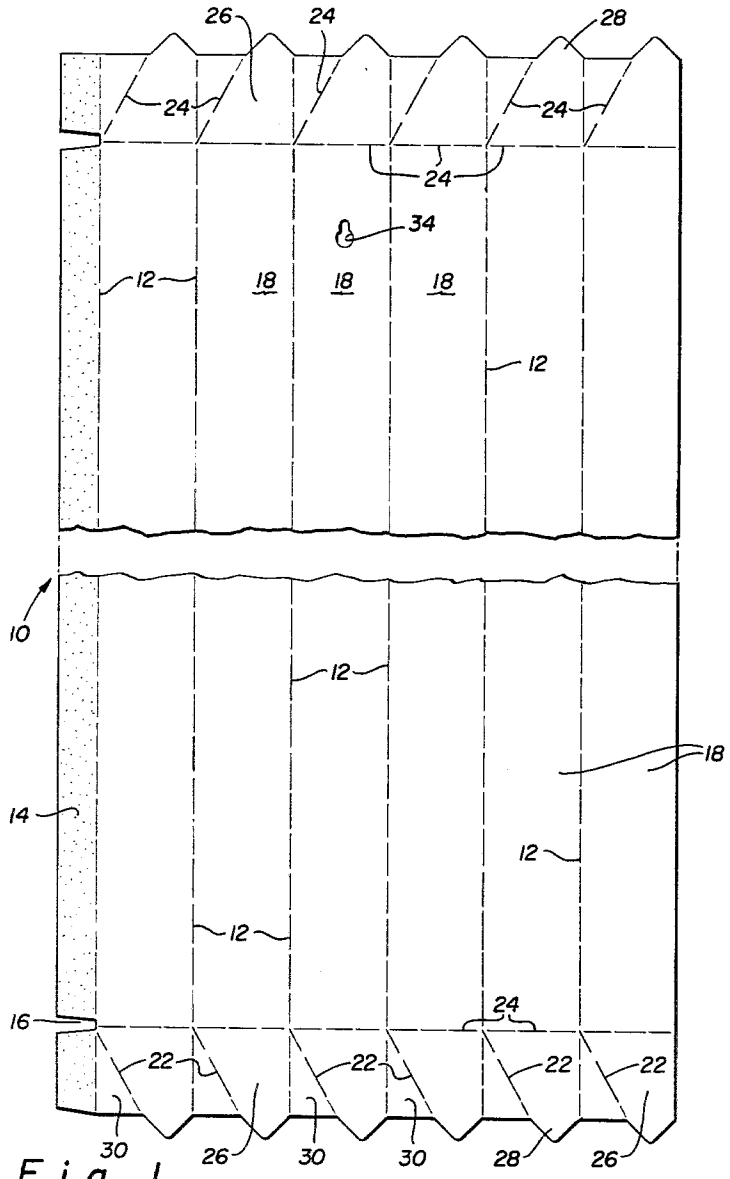


Fig. 1

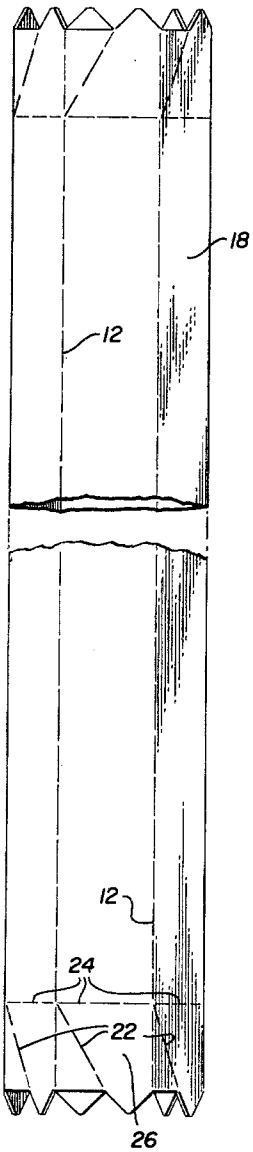


Fig. 2

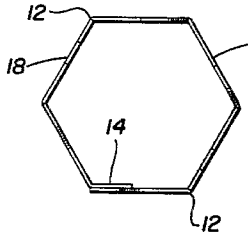


Fig. 3

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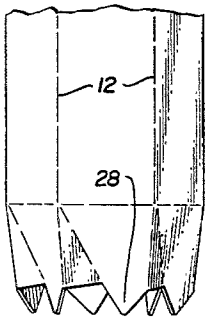


Fig. 4

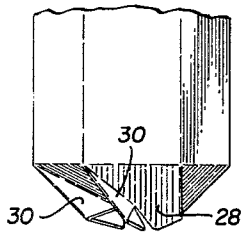


Fig. 5

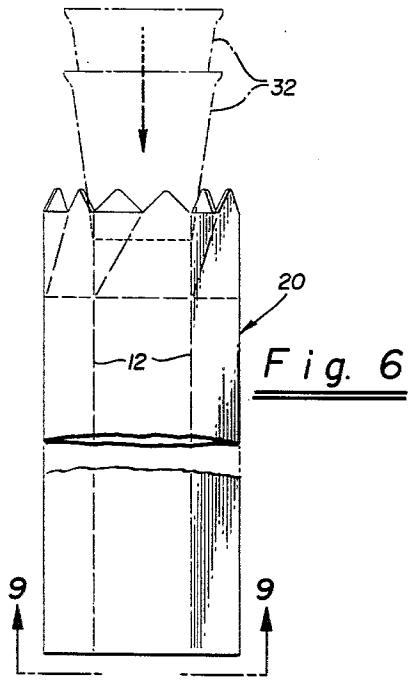


Fig. 6

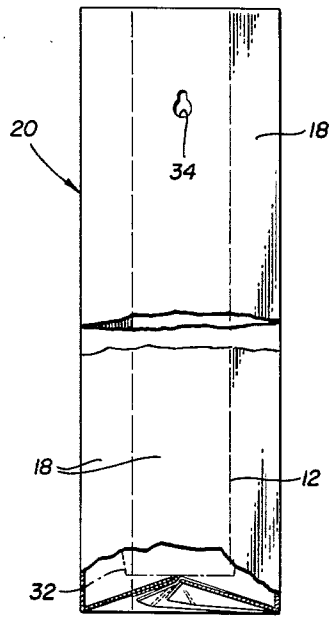


Fig. 7

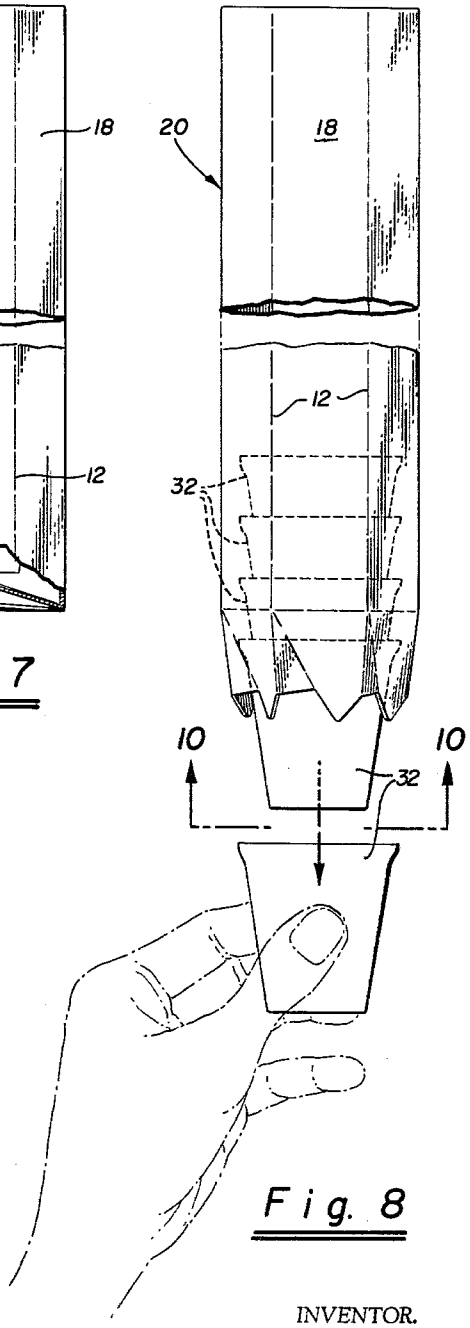


Fig. 8

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SELF-DISPENSING PACKAGE

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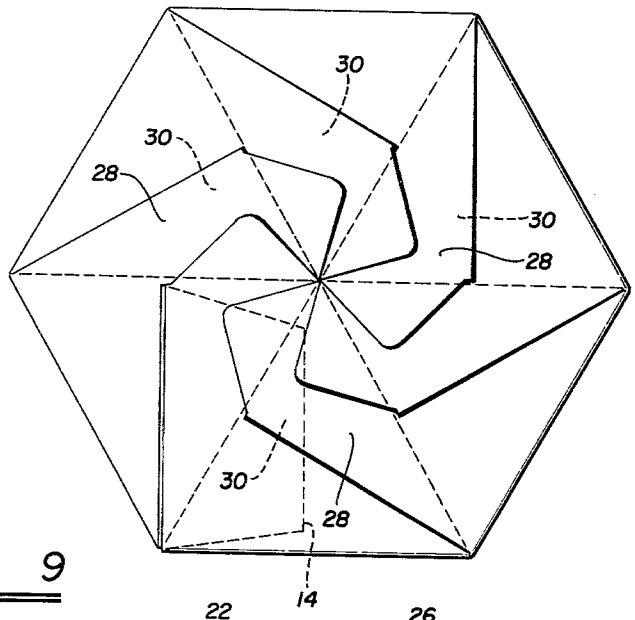


Fig. 9

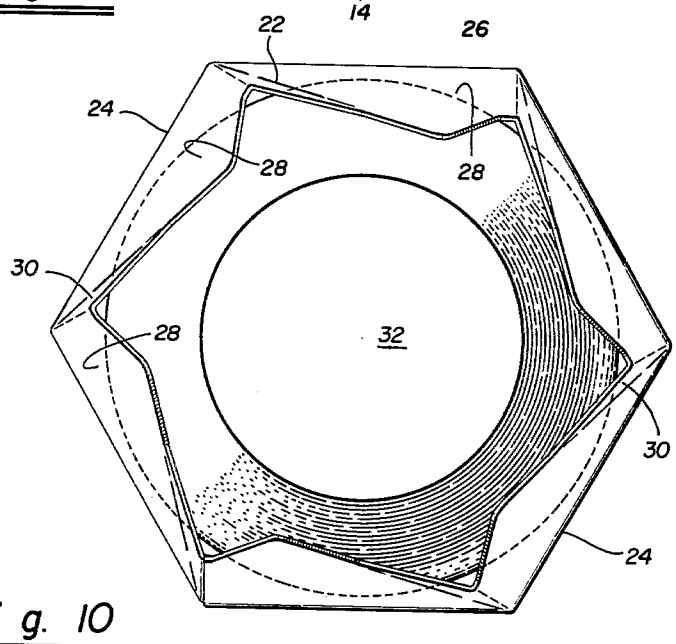


Fig. 10

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3,232,480
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3,232,480

SELF-DISPENSING PACKAGE

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1 Claim. (Cl. 221—305)

This invention relates generally to self-dispensing cartons or containers, and more particularly to such devices useful in the packaging, shipment and dispensing of stacks of nested upright receptacles such as ice cream cones, paper cups, and the like.

It is a general object of the invention to improve upon devices of such character, particularly with respect to means providing a self-dispensing package wherein the end closure also functions as a dispensing unit.

It is another object of the invention to provide a self-dispensing package of such character wherein the end closure is pleated so as to be selectively movable between a partially folded dispensing position and a fully folded sealed position.

It is another object of the invention to provide a self-dispensing package of the above type which is adapted to protectively support a large number of nested receptacles but which can be opened almost instantaneously to permit withdrawal of the receptacles individually.

Another object of the invention is to provide a shipping and dispensing container of such type which is outstandingly simple in construction and which can be used repeatedly to dispense fragile articles without damage to either the dispensed articles or to the container.

Additional objects and advantages of the invention will appear from the following description and from the drawings in which:

FIGURE 1 is a view in plan of a foldable blank useful in forming a self-dispensing package in accordance with the invention;

FIGURE 2 is a view in elevation showing an assembled position of the blank of FIGURE 1;

FIGURE 3 is an end view of the assembled blank of FIGURE 2;

FIGURES 4, 5, and 6 are views like FIGURE 2 showing, in sequence, the folding of lower end flaps to form a botom closure, and insertion through the top of the package of a stack of nested upright receptacles;

FIGURE 7 is a view in elevation, similar to FIGURE 2, showing a completed package ready for shipment or storage;

FIGURE 8 is a like view, illustrating the opening of the package and the dispensing of the packed articles individually from the lower end of the package;

FIGURE 9 is an enlarged detail view along the lines 9—9 of FIGURE 6; and

FIGURE 10 is a like view along the line 10—10 of FIGURE 8.

Heretofore, the provision of a shipping container for ice cream cones, paper cups, or the like, capable of being converted by the user into a dispenser for the cones or cups, has presented some difficulties. For one thing, the conversion has generally been relatively costly and time consuming, requiring the use of an extraneous dispensing attachment at the lower end of the container. Another difficulty is the tendency of such dispensing mechanism to dispense several items at a time, which not only contributes to a waste of material but also to increased costs in providing the dispensed item. A further problem has been the difficulty of dispensing relatively fragile items such as ice cream cones, without experiencing a relatively high rate of breakage. This is a particularly important factor where the dispensing package is likely to be used by children, or by numerous persons in offices or in other public places. Finally, no truly successful package of this character has been devised wherein the end closure is also capable of successful use as a dispensing means.

In general, the present invention is based on the provision of a carton or package having an end closure which is self-locking, but which is capable of being quickly opened and repositioned for almost instantaneous use as a dispensing mechanism. More specifically, the closure at the lower end of the package is provided with a plurality of pleated overlapping flaps so arranged and dimensioned that when the flaps are folded inwardly the free ends of the flaps all pass through a common point to an inwardly deflected sealed position. In subsequent use, upon pulling the end flaps outwardly into a partially folded position, the free ends of the flaps funtion as a resilient means permitting a safe, effective dispensing of the packed articles one-by-one through the end of the package.

Referring to the drawings, the self-dispensing package of the invention can be fabricated from a single unitary foldable member such as the blank **10** illustrated in FIGURE 1. This blank is preferably of rectangular configuration, and is provided with a plurality of longitudinal lines of weakness or fold lines **12** which permit the blank to be folded into an open ended container of generally polygonal cross section. Thus, as shown in FIGURES 2 and 3, the blank can be folded into a package having a regular hexagonal cross section, although packages of differing cross section such as pentagonal, octagonal, etc., might also be formed. Preferably the blanks are provided with a glue strip **14** along one longitudinal edge to facilitate the fabrication of the blank into the polygonal cross section. In the illustrated embodiment, the glue strip **14** is provided with V-shaped incisions **16** which facilitate sealing and dispensing use of the end flaps, as hereinafter described.

Referring again to FIGURES 1 and 2, the fold lines **12** divide the assembled blank into a plurality of panels **18** which form the side walls of the completed container or package **20**. As particularly shown in FIGURES 2, 4, and 10, the ends of these panels are provided with inclined fold lines **22** which cooperate with the longitudinal fold lines **12** and transverse fold lines **24** to provide inwardly foldable end portions or flaps **26**. In a preferred embodiment, each of the end flaps is provided with a projecting tab portion **28** of generally triangular configuration. As will appear, these projecting tabs perform a dual function, serving as locking means in a closed sealed position of the end flaps, and as resilient dispensing elements in a partially folded or dispensing position of the end flaps.

It is a feature of the invention that the end flaps **26** can be collapsed into an inwardly deflected sealed position, shown in FIGURES 7 and 9, to provide a substantially self-locking end closure. The necessary pleating to collapse the end flaps for this purpose is obtained by folding along the inclined fold lines **22** and the longitudinal fold lines **12**, so that the triangular portions **30** of each end flap tuck underneath adjacent portions of the end flap. This folding sequence is particularly shown in FIG-

URES 4 to 6. The end closure is made substantially self-locking by making the fold lines 22 slightly longer than the radial distance from the axis of the container to the panels 18 (note FIGURE 9) so that some pressure is required to depress the folded end flaps beyond the flat position into the inwardly deflected sealed position of FIGURES 7 and 9. In the closed position, the end flaps will consequently resist opening unless sufficient outward pressure is exerted to pull the flaps through the center or flat position to an outwardly deflected position.

In the preferred embodiment illustrated, the fold lines 22 are slightly greater in dimension than the radius of an imaginary cylinder circumscribing the polygonal container. This has been found to insure a self-locking pressure sufficient to resist downward pressure exerted by a stack of articles packed within the container.

After the lower end wall of the container has been deflected into a closed sealed position, it is filled with a stack or nest of ice cream cones, paper cups, or other articles 32 to be dispensed, as indicated in FIGURE 6. When an appropriate quantity of such articles has been placed within the container, the upper end closure is similarly deflected inwardly into a sealed position. The completed package, represented at 20 in FIGURE 7, is now ready for storage or shipment to the consumer. It is significant that the bottom of the stack of nested items is resiliently supported by the end closure, as shown in FIGURE 7. The rim of the upper receptacle 32 is similarly engaged by the upper end closure. At the same time the items are held in uniformly spaced relation by contact with the side panels (note FIGURES 8 and 10). This construction of the package has the advantage of providing reasonable protection against breakage during all normal handling of the package.

It will be understood that the packed container may be separately wrapped and forwarded individually, or in the alternative, packed in a box or case with other containers for shipment. On receipt, the filled container is removed from its wrapper and mounted in a vertical dispensing position, for example by means of a separate clamp or other suitable support, or preferably by means of the slotted opening 34 which may be positioned on the head of a screw, nail, or the like.

When it is desired to dispense articles from within the container, the lower end closure is opened by grasping one of the locking tabs 28 and pulling the end flaps 26 into outwardly deflected position, as represented in FIGURE 8. This operation will cause the stacked articles to feed by gravity through the bottom opening, and to assume a position generally illustrated in FIGURES 8 and 10. The stack will rest and be held at points of contact established by the tabs 28 until such time as the lowermost article is grasped and pulled downwardly to withdraw it from the container. During such operation the end flaps 26 and particularly the tabs 28 are spread apart, permitting the article to pass, after which they immediately spring inward to engage and intercept the succeeding article.

In general, it has been found that the described package construction, employing paperboard or other heavy paper suitably sized and calendered to a smooth surface, will provide just the right amount of resiliency for dispensing such items as ice cream cones or paper cups. Each may be removed one-by-one from the bottom of the container, as in FIGURE 8, without any fear of damage to the item, or imparting a permanent deformation to the end flaps such that the remaining stack is not adequately supported for dispensing purposes. From a purely practical point of view, the illustrated embodiment has demonstrated a remarkable ability to dispense various items, one-by-one, throughout many hundreds of repeated dispensing operations without any decrease in the efficiency of the dispensing flaps 26 and tabs 28. Moreover, when the dispensing operation is through, the bottom closure can again be sealed in dustproof relation by merely pushing upward, first on the stack of packed items, and then on the end flaps themselves to seal the flaps beneath the lowermost item.

From the foregoing, it will be apparent that the unique foldable construction of the package of the invention makes possible the use of a simple, easily fabricated blank in the production of a convenient shipping and dispensing package for fragile, nested items. The final package, containing the nested articles, possesses many advantages: each end of the package is resiliently closed in self-locking fashion, to form a cushioning means for the packed items, yet can be quickly and easily opened by a simple outward pressure exerted on one of the end flaps; upon opening the lower end of the package, the merchandise feeds itself into a dispensing position by gravity, and each item can thereafter be readily dispensed by a simple downward pressure on the item; the end closure construction, while performing effectively and satisfactorily as a dustproof, shockproof closure, also functions with equal effectiveness to successively dispense various fragile items, one at a time, without any danger of breakage. The invention also makes possible the packaging of various nested items such as ice cream cones, cup pastry, candy, paper cups, and other articles, in a simple attractive manner without requiring any separate fastening means or dispensing attachments, as generally required by prior art devices. These and other advantages make the self-dispensing carton of the invention particularly useful for the purpose stated.

I claim:

A package for protectively transporting and dispensing stacked nested articles having tapered sidewalls such as ice cream cones, paper cups, and similar articles, comprising a container formed of sheet material folded along longitudinal fold lines to provide a polygonal cross section, said fold lines defining longitudinal panels therebetween, said longitudinal panels being provided at their lower ends with transverse fold lines and cooperating inclined fold lines forming collapsible end flaps, said end flaps being subdivided by said inclined fold lines to form adjacent tucking and tab portions of generally triangular configuration, said tab portions having a dimension slightly greater than the radius of an imaginary cylinder circumscribing said polygonal container so as to provide said tab portions with integral projecting contact portions extending along and outwardly from the end flaps, a plurality of stacked nested articles within and closely adjacent the longitudinal panels and end flaps of said container, said articles having tapered sidewalls, said end flaps being movable about said transverse fold lines between a closed inwardly deflected position in which the end flaps completely close the end of the container and resiliently engage said nested articles and a dispensing position in which the articles are yieldably retained by the projecting integral contact portions of said end flaps, said end flaps in said closed position having said tucking portions folded along said inclined fold lines so that said tucking portions underlie said tab portions, said end flaps being yieldably locked in said completely closed inwardly deflected position by the geometry and dimensions of said tab portions, said end flaps in a dispensing position projecting downwardly in a substantially frustoconical arrangement to form a substantially circular opening through which the bottom portion of the lowermost nested article can extend and wherein said contact portions of said end flaps yieldably grasp the sidewalls of the lowermost nested article in said stack of nested articles to yieldably retain said nested articles within the package, said contact portions being resiliently expandable about said inclined fold lines to permit the articles to be withdrawn one by one from the package.

(References on following page)

References Cited by the Examiner

UNITED STATES PATENTS

1,201,963	10/1916	Hill	221—310 X
2,047,804	7/1936	Shapiro.	
2,091,291	8/1937	Ringler.	
2,216,323	10/1940	Ringler	221—305 X

2,349,074	5/1944	Buttermann	221—310
2,359,337	10/1944	Turek	221—305 X

FOREIGN PATENTS

505,526	5/1939	Great Britain.

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