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REINFORCED HINGED CONTAINER

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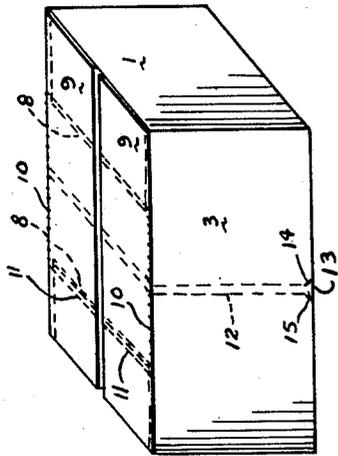


Fig-1

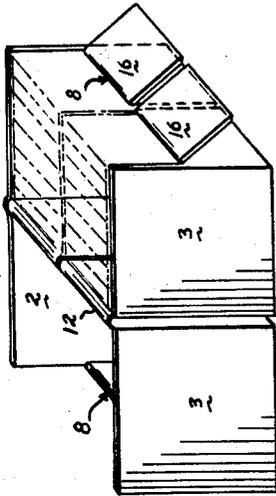


Fig-3

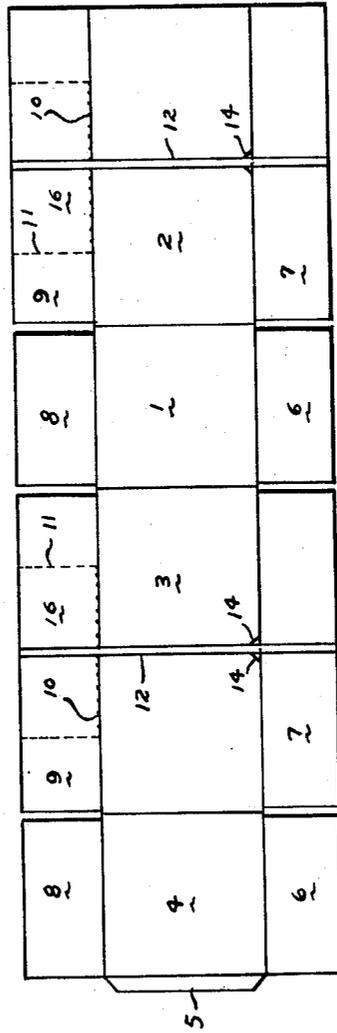


Fig-2

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REINFORCED HINGED CONTAINER

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This invention relates to improvements in shipping containers rendering them more economical to employ, more efficient and satisfactory in use and adaptable to a wider variety of applications. More particularly, it contemplates the modification of conventional paperboard cartons, such as those of corrugated board or boxboard, adapting such cartons to be neatly and easily opened and in a manner not only to enable their immediate use as highly effective warehousing and display receptacles for their contents but also to facilitate their re-use as shipping cartons.

A primary object of the invention is to provide simple and economical improvements in shipping containers, particularly those of corrugated board and boxboard, which render such containers more efficient and satisfactory in use and adaptable to a greater variety of applications.

Another object of the invention is to provide improved shipping cartons capable of being simply converted to warehousing and display receptacles for their contents.

A further object of the invention is to provide an improved shipping container which can be quickly and easily opened and in a manner to facilitate its re-use.

An additional object of the invention is to provide a novel shipping carton of paperboard or the like which can be readily converted into dual storage and display receptacles for its contents.

A further object of the invention is to provide a novel shipping container which can be readily converted to a display receptacle of a nature enabling ready inspection and removal of its contents.

An additional object of the invention is to provide shipping containers of paperboard or materials having similar physical characteristics possessing the advantageous structural features, the inherent meritorious characteristics and the means and mode of operation herein described.

With the above and other incidental objects in view as will more fully appear in the specification, the invention intended to be protected by Letters Patent consists of the features of construction, the parts and combinations thereof, and the mode of operation as hereinafter described or illustrated in the accompanying drawings, or their equivalents.

Referring to the accompanying drawings wherein is shown one but obviously not necessarily the only form of embodiment of the invention,

FIG. 1 is a top perspective view of a sealed shipping carton in accordance with the invention;

FIG. 2 is a pattern for the carton of FIG. 1; and

FIG. 3 illustrates the conversion of the carton of FIG. 1 into warehousing and display receptacles for its contents.

Like parts are indicated by similar characters of reference throughout the several views.

The preferred embodiment of the invention illustrated is formed from a single section of corrugated board. As may be seen from its pattern in FIG. 3 of the drawings, portions of this board are suitably scored to serve as integral hinges between the carton components which they define.

The carton illustrated includes an end panel 1, at one vertical edge of which is hinged a side panel 2 and

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to the opposite vertical edge of which is hinged a side panel 3. Hinged to the vertical edge of the panel 3 remote from the panel 1 is a second end panel 4. The panel 4 has a projected paper tab 5 which runs the length of its free vertical edge.

As is evident from the drawing, the scored hinge portions of the basic pattern permit the panels 1 through 4 to be bent at right angles to each other to form a box-like structure. In the process the relatively free vertical edges of the end panel 4 and the side panel 2 are brought together to dispose these panels at right angles to each other. The tab 5 on the extremity of the panel 4 is folded over the adjacent free vertical edge of the panel 2 and attached thereto, the length thereof, by means of an adhesive or other suitable attachment device. The structure so defined establishes the panels 1 and 4 in spaced parallel relation and similarly establishes the side panels 2 and 3 in parallel spaced relation.

Integrally hinged to the bottom edge of each of the end panels 1 and 4 is a flap portion 6. The integral hinges provide for the co-planar disposition of the flaps 6 inwardly of the box-like structure formed by the panels 1 through 4. Integrally hinged to the bottom of each of the side panels 2 and 3, substantially coextensive therewith, are flaps 7. The flaps 7 are hinged to fold towards each other, at right angles to the flaps 6 and to the undersurface thereof. The projected extremities of the flaps 7 are thereby placed in adjacent spaced relation and together with the flaps 6 which they overlap provide a bottom closure for the box-like structure defined by the panels 1 through 4. In use the flaps 7 are attached to the flaps 6 by adhesive or other suitable means to insure a fixed relation therebetween.

Integrally hinged to each of the upper edges of the panels 1 and 4 is a flap 8. The flaps 8 are identical with the flaps 6 and similarly adapted to be folded over in co-planar disposition inwardly of the top opening provided by the box-like structure formed by the panels 1 through 4. Integrally hinged to the respective upper edges of the side panels 2 and 3 are flaps 9 having a general configuration and size identical with the flaps 7. The flaps 9 are hinged to fold over and be fixed in overlapping relation to the flaps 8 with their projected extremities in adjacent parallel relation. Thus, the flaps 8 and 9 form a top closure for the box-like structure defined by the panels 1 through 4.

The flaps 9, however, are distinguished from the bottom flaps 7. It is a characteristic of the flaps 9 that each has a line of perforations 10 along the hinge portion thereof which terminates at either end in adjacent spaced relation to its lateral extremities. Additionally each flap 9 is bridged by a pair of parallel score lines 11, the respective lines occurring at the respective ends of its line of perforations 10 and at right angles thereto. The purpose of the lines of perforations 10 and associated score lines 11 will be described further.

On the inner surface of the side panel 2, centered intermediately of its lateral extremities and parallel thereto is an adhesively attached strip of reinforcing tape 12. The tape 12 extends beyond the vertical extremities of the side panel 2 over the inner surface portions of the connected flaps 7 and 9, to their projected extremities. A similar tape strip 12 is similarly positioned and adhesively fixed on the inner surface of the side panel 3 and its connected flaps 7 and 9.

Each of the side panels 2 and 3 has a die cut 13 at the base of its wall structure, positioned at its center, in overlying relation to the tape 12. In the process of making this cut, the tape 12 thereunder is severed and the cut extended slightly to either side thereof. Additional cuts 14 are provided in each of the side panels to ex-

tend upwardly from either end of the cut 13, in relatively convergent relation, and terminate respectively at either side of the tape 12 thereunder. The cuts 13 and 14 thereby define tabs 15 at the base of each side panel, the purpose of which shall be shortly described.

The carton above described may be utilized to ship merchandise as any conventional shipping carton. However, for purposes of illustration, the drawings illustrate its use for shipping books. After forming the carton and its bottom closure, the carton is loaded and sealed as previously described. The carton being appropriately sized, the books are stacked therein on their backs in vertical piles. Observing the drawings, it will be seen that the reinforcing tapes 12 have the effect of dividing the interior capacity of the carton in half. On receipt of the carton by a distributor, it may be quickly and easily opened by inserting a nail under the tab portions 15 to pry them outwardly of the carton sides. The tabs 15 and attached underlying tapes 12 may then be suitably grasped by the fingers. On pulling outwardly and upwardly on the tapes 12 from the locations of the opposite tabs 15, the reinforcing tapes are caused to sever the portions of the carton sides 2 and 3 and the top flaps 9 in their path. At this point the bottom flap portions 7 are still reinforced by the attached remaining portions of the tapes 12. This enables the respective end sections of the carton to be turned outwardly from each other and upwardly, the taped portions of the bottom flaps 7 serving as a reinforced flexible hinge therebetween. Thus, a simple stripping of the inner opposite tape sections 12 outwardly and upwardly of the sides and top flaps 9 of the illustrated carton converts the carton into a pair of hinged receptacles. As may be seen from FIG. 3 of the drawings, each receptacle, in the case of the books, then accommodates an equal number of stacked books which in the hinging of the carton are disposed vertically, the books having their upper edges uppermost.

As may be seen from FIG. 1 of the drawings, the respective adjacent extremities of the upper flaps 8 on the end panels 1 and 4 so extend in underlying relation to the overlying flaps 9 when the carton is sealed as to provide a reinforcement therefor.

When the receptacles are hinged, as illustrated in FIG. 3 of the drawings, the flaps 9 have been divided and their respective halves are vertically disposed, remote from each other. The perforations 10 and score lines 11 then define panel sections 16 thereon which are uppermost, the hinged displacement of which they facilitate. By a simple pull, perforations 10 are severed and the sections 16 may be hinged downwardly on the scored lines to expose the outer sides of the contained books and thereby facilitate their inspection and removal. The sections 16 may be otherwise suitably disposed, if so desired.

Thus, it will be obvious that the invention improvements as applied to cartons of boxboard, paperboard and materials having similar characteristics produces a unique shipping container which can be simply and easily opened and converted to a plurality of hinged receptacles. A carton of this sort enables the distributor or warehousing agency to handle the cartons easily and in a manner enabling them to stock their contents in a protected readily accessible condition. The cartons occupy minimal space and in a manner to enable their contents to be readily inspected and any portion thereof easily removed. Moreover, in cases where the distributor desires to return or to trans-ship the contents or a major portion thereof, he need merely swing the one hinged portion thereof over the other, hinge sections 16 to a closure position and effect a shipping package by a simple taping procedure involving a minimal of time and effort.

The economies in the use of an improved carton in accordance with the invention are believed obvious. Moreover, they enable a high degree of efficiency in material handling procedures.

From the above description it will be apparent that

there is thus provided a device of the character described possessing the particular features of advantage before enumerated as desirable, but which obviously is susceptible of modification in its form, proportions, detail construction and arrangement of parts without departing from the principle involved or sacrificing any of its advantages.

While in order to comply with the statute the invention has been described in language more or less specific as to structural features, it is to be understood that the invention is not limited to the specific features shown, but that the means and construction herein disclosed comprise but one of several modes of putting the invention into effect, and the invention is therefore claimed in any of its forms or modifications within the legitimate and valid scope of the appended claims.

Having thus described my invention, I claim:

1. A shipping container comprising, a box-like structure, means providing reinforcing bands bonded to interior surface portions thereof substantially coextensive with at least three outer sides, means defining areas of weakness in said structure localized to provide access to said bands intermediate the extremities thereof, said bands being of a character, that on grasping thereof at said areas of weakness and pulling outwardly thereon portions of said bands are torn from the structure and portions of said structure in the path thereof are caused to separate, converting said structure into a plurality of connected receptacles.

2. A shipping container comprising, a box-like structure of corrugated board or other material having similar physical characteristics, reinforcing means integrated to its inner surface on a substantially continuous line extending over a plurality of respectively contiguous sides, intermediate their ends and in a plane dividing said structure into separate sections, and means included in said structure providing for the severing of said structure along said line by said reinforcing means on all but one side thereof, the reinforcing means at said one side of said structure providing a reinforced hinge between the separate sections of said structure produced thereby.

3. A shipping container comprising, a box-like structure of corrugated board or other material having similar physical characteristics, reinforcing means integrated to its inner surface on a substantially continuous line, about a plurality of respectively contiguous sides and in a plane dividing said structure into separate end sections, and means included in said structure providing for the severing thereof in said plane by said reinforcing means, a plurality of receptacles being produced thereby, each of said receptacles including weakened areas defining displaceable panel portions facilitating inspection of and access to its contents.

4. In a shipping carton of paper material or its equivalent, reinforcing strip material adhesively fixed to its interior surface at its front, rear, top and bottom to divide said carton on a line intermediate its ends and means defining openings in said carton providing access to the interior of said carton for grasping said strip material and pulling outwardly thereon in a manner to produce a severing of the overlying carton material on all but one side of said carton to provide a pair of hinged receptacles thereby.

5. A shipping container consisting of integrally connected panels forming a sealed carton, means on opposite wall portions of said carton providing lines of reinforcement coextensive therewith which are co-planar and define a division of the interior of said carton into distinct sections, opening means at the base of said carton and in said opposite wall portions thereof providing for the grasping of said reinforcing means and pulling thereof outwardly to sever the carton and convert it into a plurality of laterally hinged receptacles.

6. A shipping carton including a pair of side panels, a pair of end panels connecting said side panels to form a rectangular enclosure open to its top and bottom, flaps

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on each of said panels to top and bottom, the flaps on the bottoms of said panels overlapping to form a bottom closure, the flaps on the tops of opposite panels being folded toward each other to be co-planar and together form a top closure, a strip of tape-like material on the interior of each of opposed panels extending at least from the base thereof and to and under the flap at the top thereof and means providing access to the interior of said enclosure at the base portions of said opposed panels for grasping the tapes and pulling them through said opposed panels and connected top flaps to produce a pair of hinged receptacles thereby.

7. A shipping container including, parallel side panels, parallel end panels connecting said side panels, forming an enclosure, flaps on said panels overlapping to form a bottom closure, flaps on said panels overlapping to form a top closure, slits in a pair of said panels, at the base portions thereof, defining means for access to the interior of said enclosure, severing means connected to the interior of each of said pair of panels on lines which are co-planar which on grasping thereof, enabled by said slits, and pulling outwardly thereon will produce a tearing of said container in the path thereof and thereby per se convert said container to a pair of receptacles.

8. In a carton of paper material or the like including pairs of parallel side panels and end panels, each pair having flaps folding over and terminating short of each other in co-planar relation to mutually provide closures to top and bottom of said panels, means attached to the inner surface of opposed panels, extending in co-planar relation the length thereof and to the extremities of their connected flaps and means at the base of each of said opposed panels defining a tab including a portion of said attached means which on being grasped and pulled outwardly with said attached means produce a three-sided severing of the carton and per se a pair of receptacles connected by a reinforced hinge which receptacles can be readily connected by a strip of tape material.

9. A carton consisting of a box-like structure, opposite sides of which include hinged flaps folding to provide its top and bottom, strip reinforcing means lining opposite sides of said structure and their connected flaps to define a division of the interior of said structure into separate sections and means for stripping said reinforcing means through said opposite sides and connected flaps to produce a plurality of hinged receptacles.

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10. The structure as set forth in claim 9 characterized by flaps connected to said opposite sides including perforated portions defining sections which may be readily displaced subsequent to hinging of said receptacles to facilitate inspection of and access to their contents.

11. A convertible shipping carton, including a hollow box-like structure having top and bottom closures as well as end and side walls, tape means peripherally bonded to said structure on the interior thereof in a plane transversely of said side walls intermediate said end walls, and means for tearing side and top portions only of said tape means from said structure separating said structure into opposing portions flexible about a joint defined by an unseparated part of said structure at the bottom closure, untorn tape means reinforcing said joint.

12. A convertible shipping carton, including a hollow box-like structure having top and bottom closures as well as end and side walls, tape means peripherally bonded to said structure on the interior thereof in a plane transversely of said side walls intermediate said end walls, the side walls of said structure having openings interrupting said tape means at locations adjacent respective side margins of said bottom closure, said tape means being accessible through said openings to be torn from said structure upwardly through said side walls and across said top closure, said structure being separated thereby in said plane except across said bottom closure, the latter defining in said plane a joint about which said structure is flexible to define a pair of open top connected containers, untorn tape means reinforcing said joint.

13. A convertible shipping carton according to claim 12, characterized by perforated sections in said top closure at opposite ends thereof defining flaps which can be separated and displaced to expose to a lower lever the interior of said container through the front thereof as defined by separated portions of said top closure.

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