ABSTRACT OF THE DISCLOSURE

A package for small items comprising a covered box containing a cushioning insert formed from a foamed plastic sheet which has been molded and folded to provide a plurality of open topped compartments. The cover may optionally be made transparent and hingedly attached to the box.

The present invention relates to packages and more specifically to packages having a plurality of compartments or sections for items such as eggs, vegetables, fruit and the like and to a method for making same.

It is an object of the present invention to provide a novel and relatively high strength compartmentalized container for small items such as eggs, vegetables, fruit and the like.

Another object is to provide a multicomartment package which is simple and easily fabricated.

Another object of the present invention is to provide a multicompartment container for small items having a transparent covering.

Another object of the present invention is to provide a container having a plurality of relatively deeply recessed compartments designed to cushion the contained items from damage.

A further object of this invention is to provide method and means by which to attain the preceding objects.

Other objects of this invention will in part be obvious and will in part appear herein.

These and other objects are attained by a carton comprising a box having an open end, a foamed plastic sheet inside said box which has been molded and folded to provide a plurality of compartments and a plastic cover adapted to cover the open end of said box.

The following drawings are provided for the purpose of illustrating various embodiments of the present invention.

FIG. I is a perspective view of the box, foam insert and plastic cover.
FIG. II is a perspective view of a carton having a cover hingedly connected on one side and a flap designed to interlock with the box on the opposite side.
FIG. III is a side view of the foamed insert prior to folding to produce compartments.
FIG. IV is a side view of a foamed insert after folding to produce compartments.

Referring to the drawings and more specifically to FIG. I, there is schematically shown separated parts of a container designed to hold items such as eggs and the like. These parts consist of a substantially rectangular box having an open end and sides 12 and 14, a foamed insert 16 which is designed to be placed inside the box 10 to provide a plurality of compartments for containing variously shaped articles such as eggs, etc., and a cover 18 fabricated of a fairly rigid transparent plastic which fits over the open end of box 10.

FIG. II illustrates an alternate embodiment of the box and cover previously described. In this illustration, a cover 20 is attached to carton 22 along one side by punched holes 24 and the cover is clamped down by means

of interlocking flaps 26 and 28 situated on the opposite side of the cover 22 and the carton 20, respectively.

FIG. III illustrates a side view of a foam molded insert which is placed into the carton to provide compartmental sections. Prior to placement within the carton, however, the insert is folded to conform to the illustrated embodiment shown in FIG. IV. As shown in FIG. IV two adjacent folded compartments are sealed together by an adhesive or a fusion at their area of contact 30. The sealing of the adjoinedly folded compartments together is considered to be an important aspect of the invention to insure stability in the insert. In this manner, the insert may be removed from the carton without causing the entire contents to fall or separate from the insert. If desired, the ends or edges where separate halves of the compartments come together may also be heat-sealed, adhered or fused together to provide a self-container insert which may be lifted from the box which encloses it.

The above description and particularly the drawings are set forth for the purpose of illustration only and not for the purpose of limitation. Although the illustrated embodiment is one having particular utility for eggs, the carton of the present invention finds utility for storage, shipment and display of fruits, vegetables and various fragile objects such as tree fruits, confections, baked goods and the like. Furthermore, although the illustrated foamed insert is folded to produce a double row of compartments, it is obvious that a foamed insert which is folded to provide several rows of compartments may be similarly employed and it is also obvious that a plurality of folded inserts may be placed one upon another in stacked relationship within the carton. In this instance, the necessity for sealing the adjoinedly folded compartments together is more obvious. In summary, both the number of compartments formed from each insert and the number of foamed inserts may be varied if desired.

The shallow depressions which are formed in the foamed sheet material may be of various shapes to accommodate a wide variety of irregularly shaped articles. The shape of the depression should closely approximate at least one side of the outside contour of the article to be accommodated. In this manner, a snug fit will be obtained which will serve to cushion the article against damage from shock caused by impact. If desired, the depressions may be formed such that after folding, each compartment has a restricted neck portion in proximity to its open end. In other words, the insert is formed of a transparent fairly rigid plastic which shall substantially surround the contained articles. In this instance, the articles would obviously be removed by taking the insert from the carton and opening the fold. In line with the above, the depressions may be formed to substantially surround articles of any shape such as square, oval, round, cylindrical and the like.

The sheet material from which the insert is formed may be of any plastic which can be manufactured in cellular form and which can be folded without causing rupture along the line of fold. Generally, the thickness of the foamed sheet will range between about 15 mils to 250 mils. Preferred materials are those polymer plastics based on styrene. The formed insert is generally manufactured by molding a foamed sheet which has been produced by utilizing conventional extruders and blowing agents. The particular method of molding is not critical since the depressions which are formed in the sheet are relatively shallow in comparison to items such as plastic cups, etc. This is a rather unique and advantageous feature of the present invention.

The carton may be of any relatively rigid material such as cardboard, plastic and the like. The cover portion is composed of a transparent fairly rigid plastic such as, for example, biaxially-oriented polystyrene. Other suitable re
3 sins which may be biaxially-oriented and used as the cover-
ing are isotactic polyethylene or polypropylene; styrene co-
polymers, for instance, styrene-acrylonitrile copolymers;
polyacrylates; polymethacrylates, polycarbonates; poly-
vinyl chloride; polyethylene terephthalates and the like.

The plastic cover can be in the form of a flat sheet, or a
sheet molded to any desirable shape, for instance, by a
thermoforming process, such as by vacuum-forming or
pressure-forming. The cover is normally relatively thin,
for instance, having a thickness of between 1 mil to 50
mils, preferably between 5 mils to 30 mils. The method
of attachment of the cover portion to the carton may also
vary considerably. For example, the cover portion may
have side walls which fit partly around the carton or may
even be hinged to one side of the carton.

As can be readily appreciated, the present invention
provides a packaging container which exposes the contents
for examination while at the same time protect the articles
contained therein from damage. In addition, the compo-
nent parts making up the package are relatively simple to
fabricate and can be readily adapted for packaging a wide
variety of irregularly shaped articles.

The above description and particularly the drawings
are set forth for purposes of illustration only. Many vari-
ations and modifications thereof will be obvious to those
skilled in the art and can be made without departing from
the spirit and scope of the invention hereinafter described.

What is claimed is:

1. A carton having multiple, relatively deeply recessed,
open top compartments, comprising a rigid outer enclosure
having sides and an open top, a substantially flat, com-
pletely transparent cover of biaxially oriented plastic for
the open end of said enclosure, said cover having a thick-
ness of between about 1 to 50 mils, and having opposed
downwardly extending flaps which overlie portions of the
sides of said enclosure, one of said flaps being hinged at-
tached to a first enclosure side, with the other of said flaps
having interlocking means for attachment to an enclosure
side opposite to said first enclosure side, a separately
formed insert within said enclosure which comprises a
substantially planar foamed sheet of a plastic polymer
based on styrene, said insert having a plurality of de-
pression pairs which are folded between the individual de-
pressions making up the pair thereby forming opposing

2. The insert according to claim 1 wherein the outer
dges of the sheet where separate halves of the compart-
ments come together are sealed.

3. A carton having multiple, relatively deeply recessed,
open top compartments, comprising a rigid outer enclosure
of biaxially oriented polystyrene, said enclosure having
an open top and a plurality of sides, a flat, one-piece, com-
pletely transparent cover of biaxially oriented polystyrene
for the open end of said enclosure, said cover having a
thickness of between about 5 to 30 mils, and having op-
posed, downwardly extending flaps which overlie portions
of some of the sides of said enclosure, one of said flaps
being hinged to a first enclosure side, the other of said
flaps having locking means for attachment to an
enclosure side opposite to said first enclosure side in a
limited area thereof, and a separately formed insert within
said enclosure which comprises a substantially planar
foamed sheet of a plastic, styrene based polymer, having
a plurality of depression pairs, which are folded between
the individual depressions making up the pair, thereby
forming opposing sides of an open top compartment, said
compartments having an external surface portion sealed to
an external surface portion of an adjacent folded com-
partment to provide stability to the insert.

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