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AUTONEST CARTON

Filed April 9, 1962

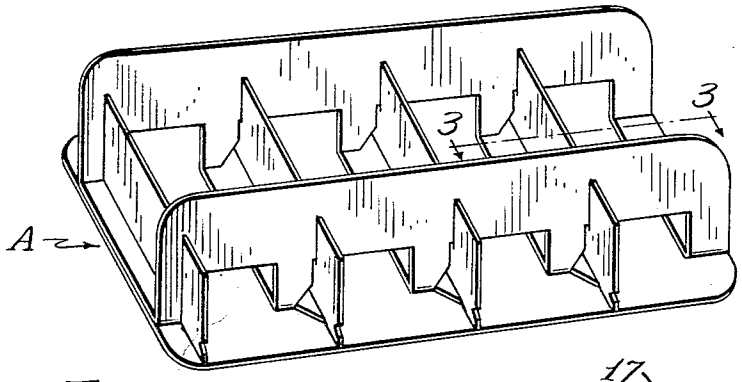


FIG. 1

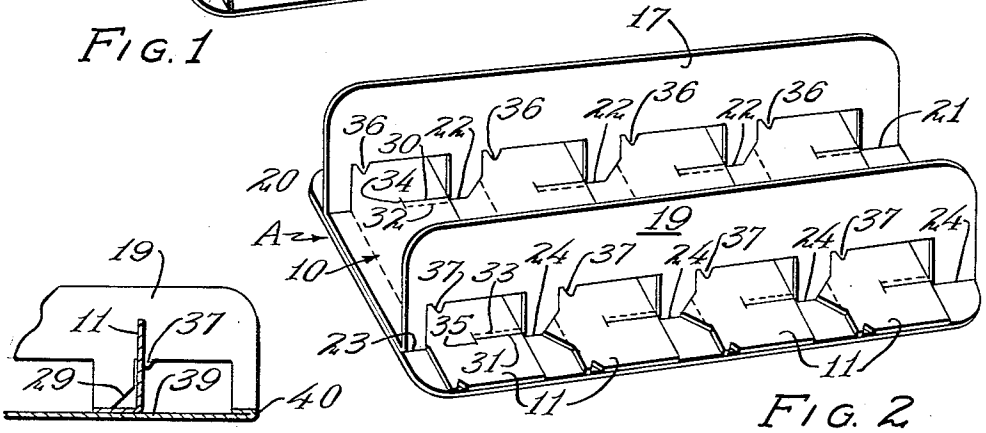


FIG. 2

FIG. 3

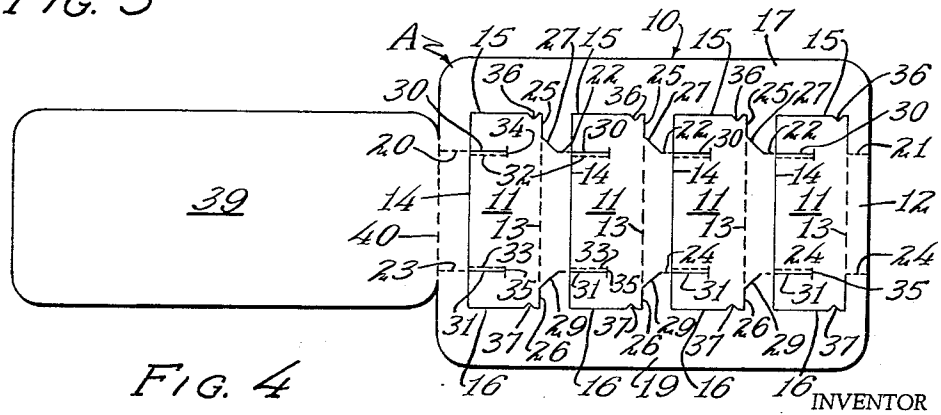


FIG. 4

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AUTONEST CARTON

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This invention relates to an improvement in autonest cartons and deals particularly with a flat paperboard panel which may be quickly and easily folded to provide a filler which may be used for supporting a series of generally similar objects in a predetermined arrangement during shipment and storage.

Many objects such as cookies are often sold in bulk, bags or similar receptacles. However, if the cookies or other objects are relatively brittle or fragile, they are readily broken by the time they are in the hands of the consumer. In order to prevent such breakage and to provide a much better display of the products sold, it is desirable to provide a cellular structure which will retain the objects in a predetermined formation during shipment and storage. It is an object of the present invention to provide an inexpensive filler structure for such a purpose.

An object of the present invention resides in the provision of a bottom panel of paperboard which is cut and creased to provide a pair of longitudinal partition panels which are foldable upwardly from the center portion of the bottom panel into spaced parallel relation. The bottom panel is also cut to form a series of transverse partition panels foldably connected to the bottom panel along fold lines which extend at right angles to the fold lines connecting the first two longitudinal partition panels to the bottom panel. When the first two longitudinal partition panels are folded upwardly into spaced parallel relation, the transverse partition panels may be folded upwardly into intersecting relation with the first folded partition flanges to form a cellular support.

A further feature of the present invention resides in the provision of a structure of the type described having an auxiliary bottom panel hingedly connected to the die cut bottom panel and foldable beneath the cellular structure to form a bottom therefor on which the goods placed in the cellular construction may rest.

A further feature of the present invention resides in the fact that the hinged bottom panel may, if desired, be printed to provide a display in the event the goods are packaged in a bag or wrapper of transparent material.

A further feature of the present invention resides in the provision of slits in the transversely extending flanges designed to interlock with the first folded flanges to hold the flanges in right angular relation. These interlocking slots are formed by cut lines and by parallel fold lines parallel to the cut line providing narrow flanges which may fold out of the plane of the transverse partition panels when the partitions are interlocked to provide an effective interlocking joint.

These and other objects and novel features of the present invention will be more clearly and fully set forth in the following specification and claims:

In the drawings forming a part of the specification;

FIGURE 1 is a perspective view of the autonest carton in readiness for use.

FIGURE 2 is a view similar to FIGURE 1 showing the first folded longitudinal partition panels in upwardly folded position and prior to the time the transverse partition panels are erected.

FIGURE 3 is a sectional view through an end portion of the carton, the position of the section being indicated by the line 3—3 of FIGURE 1.

FIGURE 4 is a diagrammatic view of the blank from which the carton is formed.

The autonest carton A comprises a generally rectangular panel of paperboard 10 which is cut and creased to provide a series of aligned longitudinally spaced partition panels 11 which are of generally rectangular form and which are pivotally connected to the central portion 12 of the partition panel 10 along spaced parallel fold lines 13. The spaced transverse partition panels 11 are of identical construction and are defined by generally U-shaped cut lines extending through the bottom panel 10 in spaced relation. These U-shaped cut lines include parallel transverse cut lines 14 which define the upper edges of the partition panels in the erected condition of the partition structure, spaced aligned cut lines 15 communicating with one end of each cut line 14 and designed to form an end edge of the transverse partition panels 11 and aligned cut line 16 which communicate with the other end of the cut lines 14 and which are designed to form the other end edges of the transverse partition panels 11. The side portions 17 and 19 of the bottom panel 10 are foldably connected to the center portion 12 of the panel along a pair of parallel hinge lines to permit the edge portions 17 and 19 to fold upwardly into right angular relation to the center panel portion 12. The hinge line connecting the longitudinal partition panel 17 includes end portions 20 and 21 which extend from the ends of the partition structure to the ends of the bottom panel 10, and aligned intermediate portions 22 which extend between the various transverse partition panels 11. In a similar manner, the side panel 19 is foldably connected to the remainder of the bottom panel 10 along a pair of aligned hinge lines 23 and 24 which extend between the end flanges 11 of the series and the ends of the bottom panel 10. The side bottom panel 19 is also connected to the central portion 12 of the panel 10 along intermediate hinge lines 24 which are between the various transverse partition flanges 11. Inwardly directed, cut lines 25 connect the cut lines 15 and 16 forming the ends of the transverse partition panels 11 to the ends of the corresponding fold lines 13, the cut lines 25 and 26 being aligned with the fold lines 13. In order to increase the area of hinge connection between the transverse partition panels 11 and the center portion 12 of the bottom panel 10, diagonal cut lines 27 and 29 extend from the inner ends of the cut lines 25 and 26 to the ends of the hinge lines 22 and 24, respectively. The end partition flange 11 adjoining the fold lines 21 and 24 are not provided with the diagonal cut lines 27 and 29. The upper edges of the transverse partition panels 11 which are defined by the cut lines 14 are each provided with a pair of parallel slits 30 and 31 which are aligned with the various hinge lines connecting the side panels 17 and 19 to the center portion 12 of the panel 10. In order that the transverse panels 11 may readily extend into the slits 30 and 31, parallel fold lines 32 and 33 are provided in the partition panels 11 to provide narrow flange portions which may fold out of the plane of the remainder of the transverse partition. Short transverse cut lines 34 and 35 are provided between the cut lines and the parallel adjacent fold lines so as to permit the narrow flanges to flex.

Short projections 36 are provided which extend downwardly from the longitudinal partition panels 17 and 19 when these panels are folded into upright position and these projections 36 and 37 interlock with the transverse partition panels 11 at the bases of the slots 30 and 31 to hold the various partitions in upright position.

As is best indicated in FIGURE 4 of the drawings, an auxiliary bottom panel 39 is hingedly connected to an end of the bottom panel 10 along a fold line 40. The provision of the auxiliary bottom panel 39 is of importance, as the major portion of the bottom panel 10 is cut away to form the transverse partition panels 11 and longitudinal

panels 17 and 19. The auxiliary panel 39 is preferably of a width substantially equal to the transverse length of the partition flanges 11 so as to form a full bottom panel for the partition structure.

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

I claim:

1. A partition forming structure including a bottom panel of paperboard die cut and creased to provide a series of spaced transverse partition panels hingedly connected to said bottom panel along parallel hinge lines, said partition panels being generally rectangular and foldable upwardly into right angular relation to the intermediate portions of said bottom panel, the portions of said bottom panel exteriorly of said partition panels being divided into an intermediate portion and two similar side portions by parallel hinge lines which are located inwardly of the ends of said transverse partition panels and extend at right angles to the lines of fold connecting said partition panels to said intermediate portion, said parallel hinge lines extending between said transverse partition panels, and between the end partition panels and the adjoining edges of said bottom panel the portions of said hinge lines extending between said transverse partition panels having ends terminating short of the lines of fold connecting said transverse partition panels to said bottom panel, and including diagonal cut lines diverging from said ends of said hinge lines to the adjacent fold lines connecting said transverse partition panels to said bottom panel, the said similar side portions being foldable upwardly into intersecting relation to said transverse partition panels forming longitudinal partition panels.

2. The structure of claim 1 and in which said transverse partition panels each include a pair of parallel slits in the edge thereof opposite the hinged edge and into which portions of said similar side portions are engageable.

3. The structure of claim 1 and including an auxiliary bottom panel hingedly connected to an end of said intermediate portion of said bottom panel and foldable into face contact therewith.

4. The structure of claim 1 and including a generally rectangular auxiliary bottom panel hinged to an end of said intermediate portion of said bottom panel and foldable into face contact therewith, said auxiliary bottom panel being of a length substantially equal to the length of the first named bottom panel and of a width substantially equal to the length of said transverse partition panels.

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