

Oct. 1, 1957

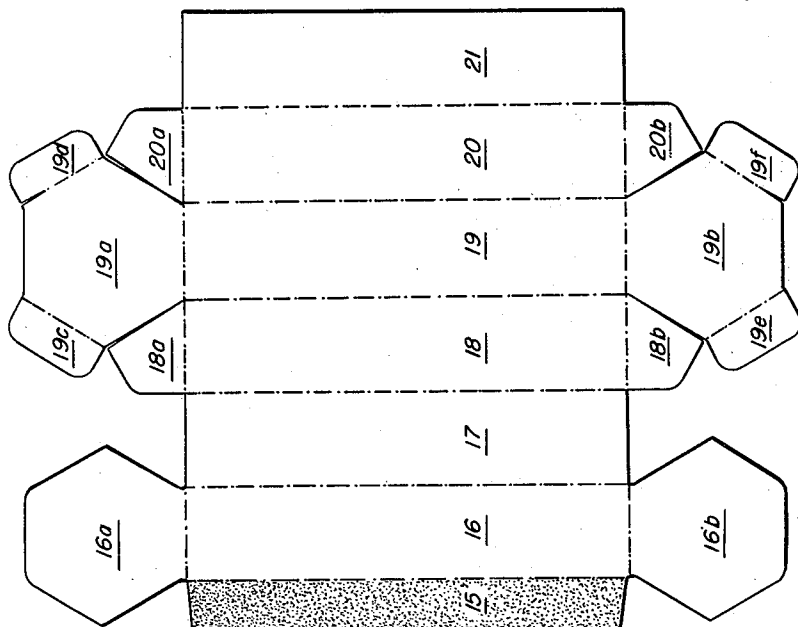
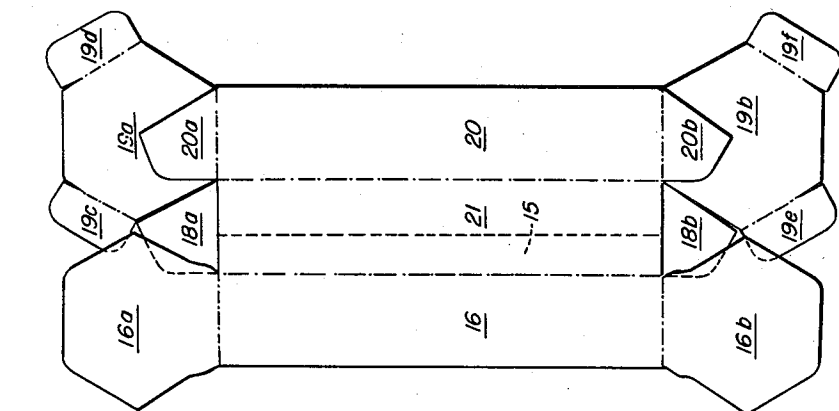
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2,808,193

CUSHIONED HEXAGONAL CARTON

Filed Aug. 15, 1956

2 Sheets-Sheet 1



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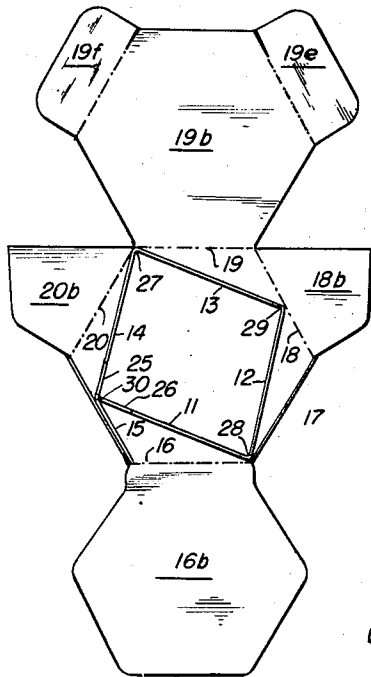


FIG. 3

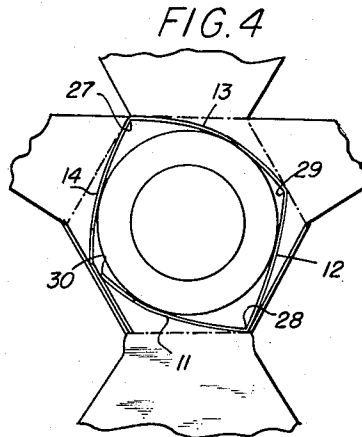


FIG. 4

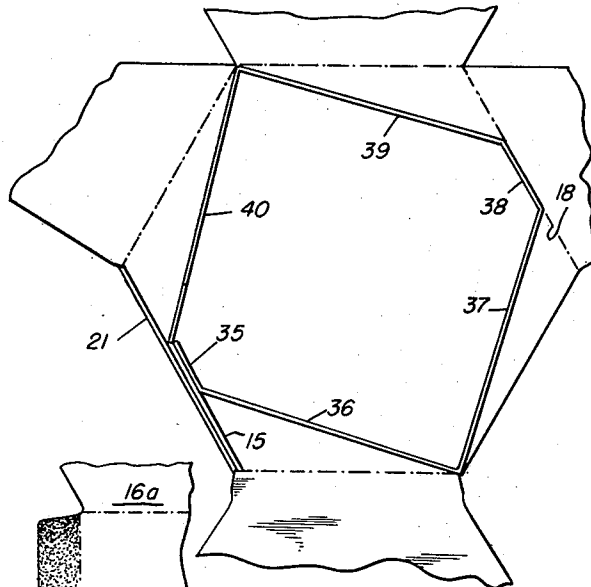


FIG. 6

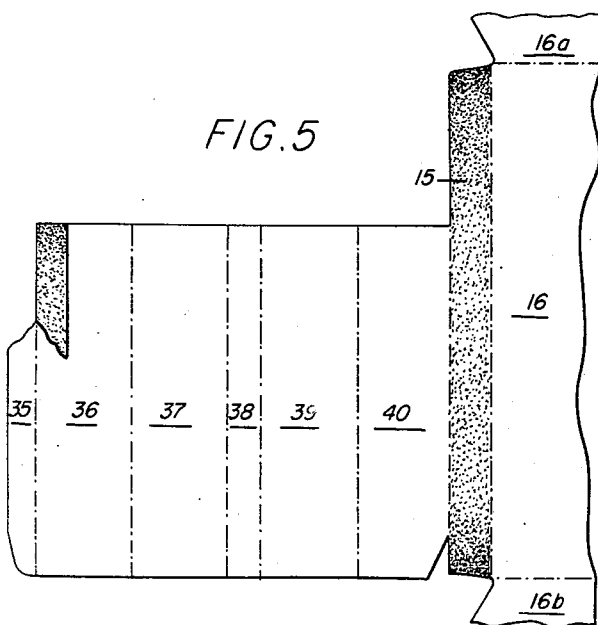


FIG. 5

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1

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CUSHIONED HEXAGONAL CARTON

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1 Claim. (Cl. 229—39)

This invention relates to cartons, more particularly to cushioned or shock-proof cartons for packaging glass bottles, radio tubes or other articles of a fragile nature.

The main object of the invention is to provide a carton for fragile articles which will protect them against breakage.

Another object is to provide a cushioned carton wherein the inner or cushioning box is expansible and adapted to adjust itself to snugly retain the packaged article.

A further object is to provide such a carton which can be constructed from a single blank in an inexpensive and simple manner and which can be preassembled and shipped to the user in collapsed condition.

The invention will best be understood from the following detailed description of the present preferred embodiment thereof as illustrated in the drawings, wherein:

Fig. 1 is a plan view of the inside face of the carton forming blank;

Fig. 2 is a plan view of the preassembled carton in collapsed condition, ready to be set up for use;

Fig. 3 is an end view looking into an open end of the box with the flaps and cover extending away from the box at right angles to its walls;

Fig. 4 is a fragmentary view similar to Fig. 3 showing a round bottle in the carton;

Fig. 5 is a fragmentary plan view of a carton forming blank showing a modification of the inner carton wall forming panels; and

Fig. 6 is a fragmentary end view looking to an open end of the box embodying the modified blank of Fig. 5.

Referring to Fig. 1, the carton blank is stamped, cut and scored to provide a series of eleven consecutive panels 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 and 21 integrally connected along parallel scored lines. Panel 16 is provided with end flaps 16a and 16b; panel 18 with end flaps 18a and 18b; panel 20 with end flaps 20a and 20b; and panel 19 with cover flaps 19a and 19b. Tucking flaps 19c and 19d are attached to cover flap 19a, and tucking flaps 19e and 19f are attached to cover flap 19b. The outer face of panel 15 is provided at the proper time with an adhesive coating, as shown by stippling, to secure the same to panel 21 upon assembly of the box.

The carton is formed by the conventional roll-around method into the preassembled collapsed condition shown in Fig. 2. In this condition, panels 15 and 21 are secured by the adhesive coating on panel 15, and the folded box blank is now finished and ready for delivery to the user. To erect the box from the preassembled blank shown in Fig. 2, the outer edges of panels 16 and 20 are pressed toward one another to form the carton shown in Fig. 3. The erected carton presents an outer box of hexagonal cross-section formed by panels 15, 16, 17, 18, 19, 20 and 21, panels 15 and 21 being connected by adhesive as hereinbefore described, and an inner support cushion of substantially rhombic but nearly rectangular cross-section formed by the panels 11, 12, 13 and 14.

Folding over flaps 18b, 20b and 16b and closing of the cover 19b, tucking in the flaps 19e and 19f, will secure

2

the carton in position ready for filling with one end closed. Closure of the other end, comprising the flaps 18a, 20a and 16a and cover 19a, completes the closure. Obviously, either end may be closed first. It should be noted that the end flaps and covers serve to stiffen the erected carton against collapse and hold it in truly hexagonal shape. Referring to Fig. 3, for example, end flap 16b is folded first and end flaps 18b and 20b are folded inwardly at right angles to panels 18 and 20 respectively on top of it, engaging two of its edges, which serves to stiffen the carton in opened position. The folding and superposition of cover 19b over flap 16b, after which tucking flaps 19e and 19f are inserted into the carton around two of the other edges of 16b, provides an end closure of two plies of cardboard material of marginal shape and dimension corresponding to the cross-section of the carton and adapted to sustain the carton against collapse under external forces.

The beveled corner 25 of panel 14 and the beveled corner 26 of panel 11, both adjacent panel 15, provide spaces in the erected carton into which the tucking flap 19f may be received when the carton is closed.

Referring to Fig. 3, it will be noted that only panel 14 of the inner support or cushion is connected to the outer box, specifically at the fold line between panels 14 and 15. As shown, inner support corners 27 and 28 are nested in the folds between panels 19 and 20 and 16 and 17 respectively, inner support corner 29 abuts the inner face of outer box panel 18, and the free edge 30 of panel 11 is nested in the fold line between panels 14 and 15. It is thus seen that the corner 29 is adapted for sliding engagement with box wall 18 and the free edge 30 of panel 11 is similarly free to slide out along panel 15. This provision adapts the inner support to expand and otherwise deform to receive and firmly support articles of various sizes and shapes, the inner support panels 11, 12, 13, and 14 being spaced from the outer box panels to effectively cushion its contents against any blow received by the outer box.

Referring to Fig. 4, there is shown an article of cylindrical cross-section such as a bottle inserted in the inner support or cushion, although it will be appreciated that the article may be of oval or other irregular shape. The article engages the inner cushion panels which are bowed slightly outwardly, thereby to snugly retain the article out of contact with the outer box. The freely sliding provision of inner support corner 29 and free edge 30 of panel 11 readily adapt the inner support to expand to accommodate articles of various shapes and cross-section. Moreover, the corners of the inner section are always in contact with the outer box and thus provide additional support for the latter against collapse.

Fig. 5 is a fragmentary view of a blank showing a modified form of the end portion thereof forming the inner cushion support. The inner support portion of the blank as modified comprises panel sections 35, 36, 37, 38, 39, and 40. Panel 35 is provided with an adhesive coating on its outer face, as shown by stippling, to secure the same to panel 15 upon assembly and erection of the box, as shown in Fig. 6. In this modification the inner cushion section stiffens the outer box considerably more than in the embodiment heretofore described and is adapted for cushion packaging of relatively larger articles. While inner support panel 38 is shown as in sliding engagement with outer box panel 18, these panels also may be secured by adhesive to make the carton even more rigid. This form of cushion is substantially square.

It will be observed from the above description that the cushioned carton may be easily and quickly assembled from a preformed blank with existing box-making machinery. The use of a four-sided rhombic or rectangular cushion with substantially equal side panels in a hexagonal outer box has unique advantages by reason of the

3

support of two opposite corners of the cushion in two opposite corners of the outer box and the consequent separation of all four cushion panels from the side walls due to the support of the other two cushion corners at intermediate points on two other side panels. A diagonal of the rhombic or square cushion, it will be noted, coincides with a major diameter of the hexagonal outer box.

It is to be understood that the foregoing detailed description is merely for the purpose of illustration and that the invention may be practiced with obvious modifications of size, form and proportion within the purview of the appended claim.

What is claimed is:

A collapsible cushioned carton of hexagonal cross-section, formed from a folded single blank and comprising a series of eleven successive panels integrally connected along parallel fold lines, the seven adjoining panels extending from one end of the blank forming an outer box with the inside of the first panel being permanently secured to the outside of the seventh panel, the remaining four panels being of substantially equal width and forming a cushion supported inside the outer box with the opposite side panels of the cushion being substantially parallel, the seventh of said first mentioned seven adjoining

4

panels being a joining panel between the adjacent outer box and cushion panels, the free end of the outermost cushion panel extending to and abutting the fold line between said joining panel and said adjacent cushion panel and being adapted for sliding engagement with said adjoining panel, the cushion fold line opposite the fold line between the adjacent cushion and adjoining panels being substantially in contact with the outer box panel opposed to said adjoining panel, and the other opposed pair of cushion fold lines being respectively in substantial contact with a pair of opposed fold lines between outer box panels.

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