April 10, 1956 G. W. HILEMAN 2,741,416

CONTAINER

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Fig. 1

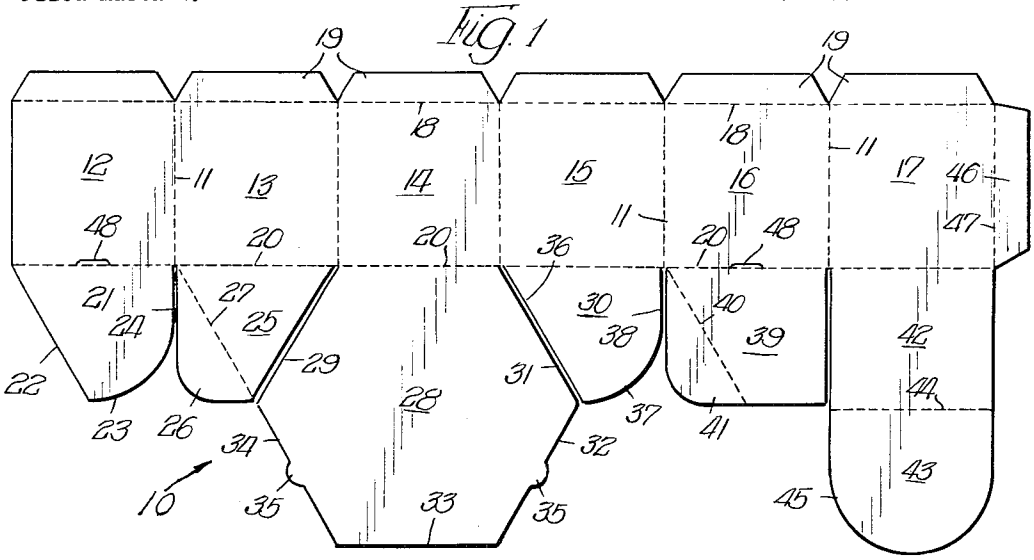
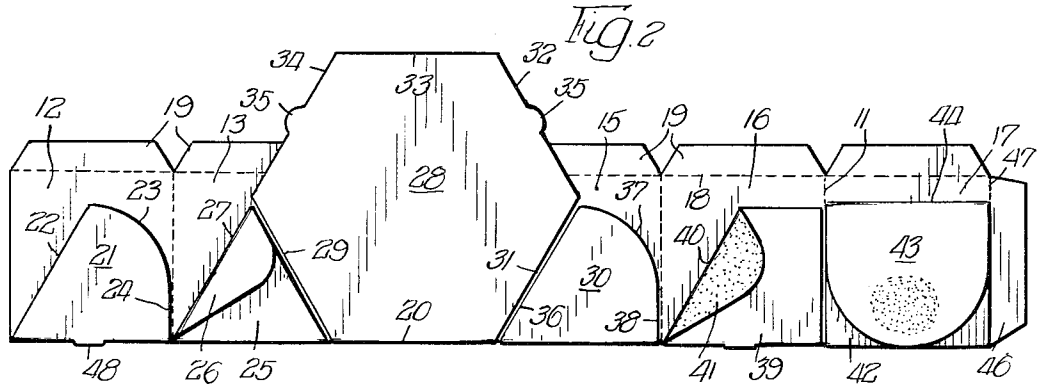


Fig. 2



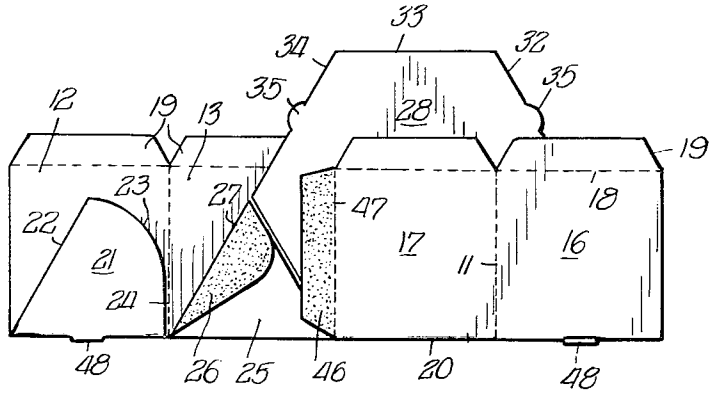


Fig. 3.

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Fig. 4

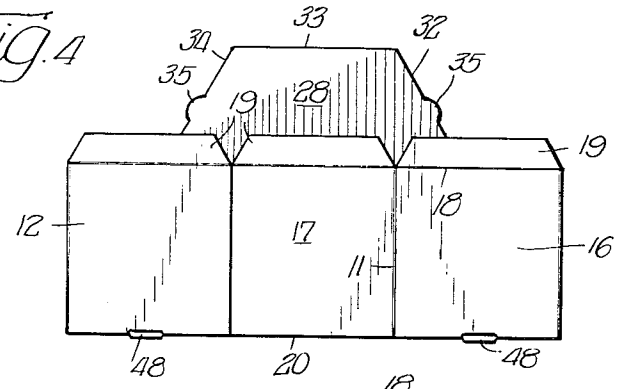


Fig. 5

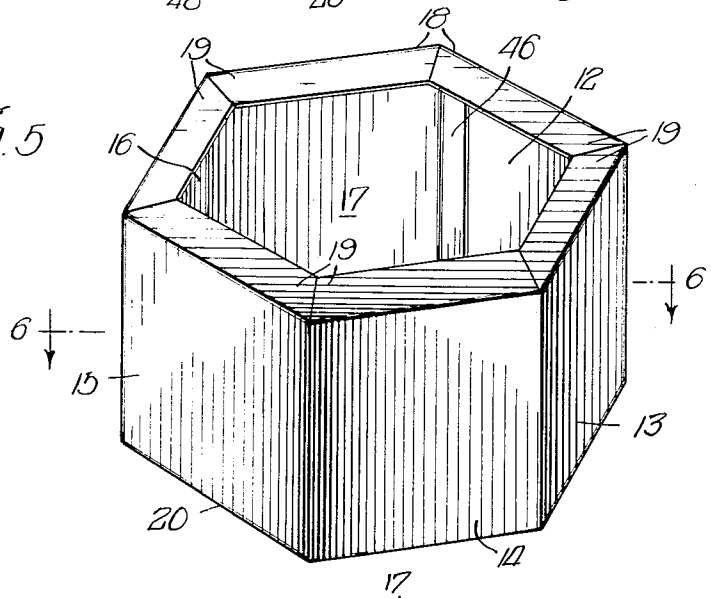
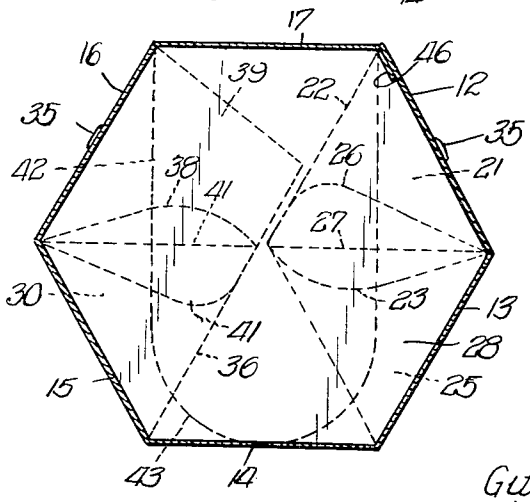


Fig. 6



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CONTAINER

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Application March 2, 1953, Serial No. 339,635

6 Claims. (Cl. 229—41)

The present invention relates to an improved multiple sided container for the packaging and/or display of articles of various sorts. More particularly, the invention relates to a non-rectangular container unit, for example of hexagonal outline of wall, to receive articles for attractive display, which unit is equally adapted as a packaging container when equipped with a suitable cover of like outline.

It is an object of the invention to provide a container of the foregoing character which affords multiple side walls of large area to receive ornamental or advertising material; which is sturdy and well braced in its erected condition by an improved bottom construction including gusseted side flaps and an internal, non-rectangular bottom locking panel; and which is readily collapsible to a flat, knocked down condition for shipment or storage.

Yet another object is to provide an improved container and a novel bottom construction therefor, particularly for a carton of polyhedral wall outline, including various overlapped and interleaved bottom forming panels which slide to a co-planar relation in a set-up condition, plus an inner, full area bottom panel hinged to one of the container walls, upon which articles to be packaged or displayed are deposited, the bottom panel being a polyhedron of area and shape the same as the cross section of the container and carrying side marginal tabs which lock to the container walls in an improved fashion.

In the drawings:

Fig. 1 is a top plan view of a flexible paperboard blank employed in fabricating the improved container, illustrating the manner in which the blank is died out, creased and preliminarily glued;

Fig. 2 is a top plan view of the blank of Fig. 1 following initial folding of certain bottom forming members thereof, and showing the application of adhesive to precede a further folding operation;

Fig. 3 shows the unit following the folding operation last referred to, indicating the application of adhesive prior to a final folding operation;

Fig. 4 is a plan view of the packaging or display unit in its completed flat, knocked down condition;

Fig. 5 is a top perspective view of the container in set-up condition; and

Fig. 6 is a view in horizontal section along the line 6—6 of Fig. 5.

Referring to Fig. 1 of the drawings, the improved container unit is fabricated from a flat blank 10 of flexible paperboard of suitable gage or thickness which is subdivided by a series of vertical parallel creases 11 into successive, integrally hinged wall forming panels 12, 13, 14, 15, 16 and 17 of identical rectangular outline. An upper horizontal margin of each of these walls is defined by the longitudinally extending crease 18, and crease 18 integrally hinges to the respective panels 12–17, inclusive, an upper flap member 19.

An elongated bottom marginal crease 20 paralleling crease 18 similarly defines the lower extremity of the panels and integrally hinges thereto a succession of bottom forming panels. These include a flap 21 hinged to the left hand end panel 12 whose outer end edge is defined by a diagonal line 22 and whose inner edge 23 is arcuate in shape, merging at 24 approximately into the line of the first or left hand vertical crease 11. A second flap 25 adjoining panel 13, has a glue tab 26 integrally hinged thereto by an inclined crease 27; while a third, inner bottom forming panel 28 of hexagonal outline is integrally hinged to side wall panel 14 by horizontal crease 20, one edge 29 of panel 28 being separated from flap 25 by an inclined cut of substantial width.

Panel 28 is separated from a fourth bottom forming flap 30 by an angular cut forming another of its hexagonal edges, designated 31, and the remaining three edges 32, 33 and 34 of the panel are equal in length to edges 29, 31 and to the portion of crease 20 which hinges panel 28 to panel 14. Panel edges 32 and 34 are provided with outwardly projecting, half-moon shaped, bottom locking tabs 35.

An edge 36 of a fourth bottom flap 30 adjoins panel 28; it is angularly shaped and the remaining edge of flap 30 is rounded at 37, merging at 38 approximately into the line of the crease 11 which connects wall panels 15, 16. A fifth bottom flap 39, is hinged to wall panel 16, being subdivided by an inclined crease 40 to provide an integral glue tab 41. This tab, like tab 26, is rounded at its lower left hand edge, but the remainder of flap 39 is rectangular-sided in outline.

A sixth bottom forming panel 42 is integrally hinged to the right hand wall panel 17. This panel is substantially larger in area than the flaps 21, 25, 30 and 39, including a glue flap 43 which is integrally hinged thereto by a horizontal crease 44 in a rectangular panel portion adjoining crease 20. The outer or lower margin of flap 43 is made semicircular in outline at 45. The outline of blank 10 is completed by a glue lap 46 integrally hinged to right hand wall panel 17 by means of a vertical crease 47.

A relatively shallow, horizontally elongated, U-shaped slit 48 is formed adjacent portions of horizontal crease 20 which integrally hinge flaps 21, 39 to the wall panels 12, 16, respectively. These slits are formed in the wall panels, and the spaced short legs thereof intersect the crease. Slits 48 afford locking slots to receive the bottom locking tabs 35 on panel 28, when the container is erected, and in some degree facilitate swinging of flaps 21, 39 to horizontal, coplanar relation with the other bottom flaps and panels in erecting the container.

In completing the container from the blank 10 of Fig. 1, all of the flaps 21, 25, 30 and 39, plus bottom forming panels 28 and 42 are first folded upwardly, inwardly and downwardly about crease 20 into overlying relation to the respective side wall panels 12, 13, 14, 15, 16 and 17, as illustrated in Fig. 2, whereupon the glue tabs 26, 41 on flaps 25, 39, respectively, as well as the flap 43 on panel 42, are reversely folded 180° about their respective portions of hinging crease 20. Flaps 41 and 43 are given a coating of adhesive, as indicated by stippling in Fig. 2.

Following this, side wall panels 16, 17 and their appended bottom forming members are folded upwardly, inwardly and downwardly about the crease 11 connecting panels 15 and 16 and subjected to pressure, which causes glue tab 41 to adhere to the upper exposed surface of flap 30 and flap 43 to adhere to the upper exposed surface of bottom forming panel 28. The blank is left in the condition illustrated in Fig. 3.

Adhesive is next applied to the exposed upper surface of reversely folded glue tab 26, and to glue lap 46, as indicated by stippling in Fig. 3, whereupon panel 12 and flap 21 are folded upwardly, inwardly and downwardly about the crease 11 connecting panels 12, 13. Flap 21 is

thus adhered to glue tab 26 and glue lap 46 is adhered to engage panel 12.

The container is shown in its thus completed, flat, knocked down condition in Fig. 4 of the drawings. To erect the same, it is necessary only to apply compressive force to opposite ends of the knocked down article, whereupon a set of wall panels 12, 17, 16 spread outwardly from the corresponding other set of panels 13, 14, 15. At the same time the adhesively secured and hingedly gusseted sets of bottom flaps 30, 39 and 21, 25 swing downwardly about the respective creases 41, 27 and interengage overlappingly, in shutter-like fashion, as they move towards a coplanar, horizontal position. As the container approaches erected condition, bottom forming panel 42, through the adhesive connection of its flap 43 to bottom panel 28 and its hinge joint at 44, tends to swing that panel downwardly toward the same horizontal position, to which it can be finally thrust manually. Locking tabs 35 wedge downwardly across the respective side wall panels 12, 16 and snap into the bottom marginal slots formed by slits 48, thereby locking and bracing the container in its erected condition.

It is evident from an inspection of Figs. 1, 2, and 3 that the unit is well adapted for manufacture on conventional folding and gluing machinery, and that blank 10 avoids unnecessary waste of material. The completed and erected article, illustrated in Figs. 5 and 6, presents an extensive hexagonal side wall surface for the reception of printing or ornamentation.

The container is a stable receptacle in which various types of merchandise whose ordinary side surfaces are more or less unattractive, for example potted plants, may be displayed attractively. The unit may also be equipped with a cover of corresponding hexagonal outline and used as a packaging container for articles such as hats and other objects of large or irregular size. Flaps 19 are then folded inwardly to horizontal position and, so folded, tend to further stabilize the container by face engagement with its cover.

I claim:

1. A collapsible container of polyhedral wall outline comprising, in erected condition, a plurality of rectangular side wall panels integrally connected to one another by vertically extending creases, said panels being secured together in a continuous tubular form, an inner bottom forming panel integrally hinged by a horizontal crease to the lower margin of a first side wall panel, pairs of bottom forming flaps integrally connected by bottom marginal creases to pairs of side wall panels on opposite sides of said first side wall panel, the flaps of said respective pairs being hinged to one another by a glue tab flexibly connected to one thereof so as to assume horizontal, coplanar relation when said container is erected, and a further bottom forming panel integrally hinged to a lower margin of a further side wall panel, said further bottom forming panel having a glue flap integrally hinged thereto, which glue flap is secured to said inner bottom forming panel and acts to swing the latter toward said first mentioned flaps as they approach said coplanar relation.

2. A collapsible container of polyhedral wall outline comprising in erected condition, a plurality of rectangular side wall panels of like shape and area integrally connected to one another by vertically extending creases, said panels being secured together in a continuous tubular form, an inner bottom forming panel integrally hinged by a horizontal crease to the lower margin of a first side wall panel, which bottom forming panel is of polyhedral outline and area equal to the cross sectional outline of said wall panels and has its edges in bracing engagement with the latter, pairs of bottom forming flaps integrally connected by bottom marginal creases to pairs of side wall panels on opposite sides of said first side wall panel, the flaps of said respective pairs being hinged to one another by a glue tab flexibly connected to one thereof so as to assume horizontal, coplanar relation when said container is erected, and a further bottom forming panel integrally hinged to a lower margin of a further side wall panel opposite said first wall panel, said further bottom forming panel having a glue flap integrally hinged thereto by a transverse crease, which glue flap is secured to said inner bottom forming panel and acts to swing the latter toward said first mentioned flaps as they approach said coplanar relation.

3. A collapsible container of polyhedral wall outline comprising, in erected condition, a plurality of rectangular side wall panels integrally connected to one another by vertically extending creases, said panels being secured together in a continuous tubular form, an inner bottom forming panel integrally hinged by a horizontal crease to the lower margin of a first side wall panel, pairs of bottom forming flaps integrally connected by bottom marginal creases to pairs of side wall panels on opposite sides of said first side wall panel, the flaps of said respective pairs being hinged to one another by a glue tab flexibly connected to one thereof so as to assume horizontal, coplanar relation when said container is erected, and a further bottom forming panel integrally hinged to a lower margin of a further side wall panel, said further bottom forming panel having a glue flap integrally hinged thereto, which glue flap is secured to said inner bottom forming panel and acts to swing the latter toward said first mentioned flaps as they approach said coplanar relation, said inner bottom forming panel being provided with a locking tab on a free edge thereof and one of said side wall panels having an opening at the bottom thereof which lockingly receives said tab.

4. A collapsible container of polyhedral wall outline comprising, in erected condition, a plurality of rectangular side wall panels of like shape and area integrally connected to one another by vertically extending creases, said panels being secured together in a continuous tubular form, an inner bottom forming panel integrally hinged by a horizontal crease to the lower margin of a first side wall panel, which bottom forming panel is of polyhedral outline and area equal to the cross sectional outline of said wall panels and has its edges in bracing engagement with the latter, pairs of bottom forming flaps integrally connected by bottom marginal creases to pairs of side wall panels on opposite sides of said first side wall panel, the flaps of said respective pairs being hinged to one another by a glue tab flexibly connected to one thereof so as to assume horizontal, coplanar relation when said container is erected, and a further bottom forming panel integrally hinged to a lower margin of a further side wall panel opposite said first wall panel, said further bottom forming panel having a glue flap integrally hinged thereto by a transverse crease, which glue flap is secured to said inner bottom forming panel and acts to swing the latter toward said first mentioned flaps as they approach said coplanar relation, said inner bottom forming panel being provided with a locking tab on a free edge thereof and one of said side wall panels having an opening at the bottom thereof which lockingly receives said tab.

5. A collapsible container of polyhedral wall outline comprising, in erected condition, a plurality of rectangular side wall panels integrally connected to one another by vertically extending creases, said panels being secured together in a continuous tubular form, an inner bottom forming panel integrally hinged by a horizontal crease to the lower margin of a first side wall panel, pairs of bottom forming flaps integrally connected by bottom marginal creases to pairs of side wall panels on opposite sides of said first side wall panel, the flaps of said respective pairs being hinged to one another by a glue tab flexibly connected to one thereof so as to assume horizontal, coplanar relation when said container is erected, and a further bottom forming panel integrally hinged to a lower margin of a further side wall panel, said further bottom forming panel having a glue flap integrally hinged thereto, which glue flap is secured to said inner bottom forming

panel and acts to swing the latter toward said first mentioned flaps as they approach said coplanar relation, said bottom forming flaps in combination with said further bottom forming panel and its associated glue flap adapted to form a substantially closed outer bottom upon which said inner bottom forming panel is superimposed.

6. A collapsible container of polyhedral wall outline comprising, in erected condition, a plurality of rectangular side wall panels integrally connected to one another by vertically extending creases, said panels being secured together in a continuous tubular form, an inner bottom forming panel integrally hinged by a horizontal crease to the lower margin of a first side wall panel, pairs of bottom forming flaps integrally connected by bottom marginal creases to pairs of side wall panels on opposite sides of said first side wall panel, the flaps of said respective pairs being hinged to one another by a glue tab flexibly connected to one thereof so as to assume horizontal, coplanar relation when said container is erected, and a further bottom forming panel integrally hinged to a lower margin of a further side wall panel, said further

bottom forming panel having a glue flap integrally hinged thereto, which glue flap is secured to said inner bottom forming panel and acts to swing the latter toward said first mentioned flaps as they approach said coplanar relation, said bottom forming flaps arranged to be positioned intermediate said further bottom forming panel and its associated glue flap and said inner bottom forming panel and having portions thereof overlying said further bottom forming panel.

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