

[54] POP-UP CARTON CONSTRUCTION
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[22] Filed: Apr. 19, 1974
[21] Appl. No.: 462,311

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[52] U.S. Cl. 206/45.13; 206/45.1 S; 206/45.29; 229/31 FS
[51] Int. Cl.² B65D 79/00
[58] Field of Search 206/44.11, 44.12, 45.13, 206/45.14, 45.15, 45.18, 45.19, 45.28, 45.29; 229/31 FS, 33, 36

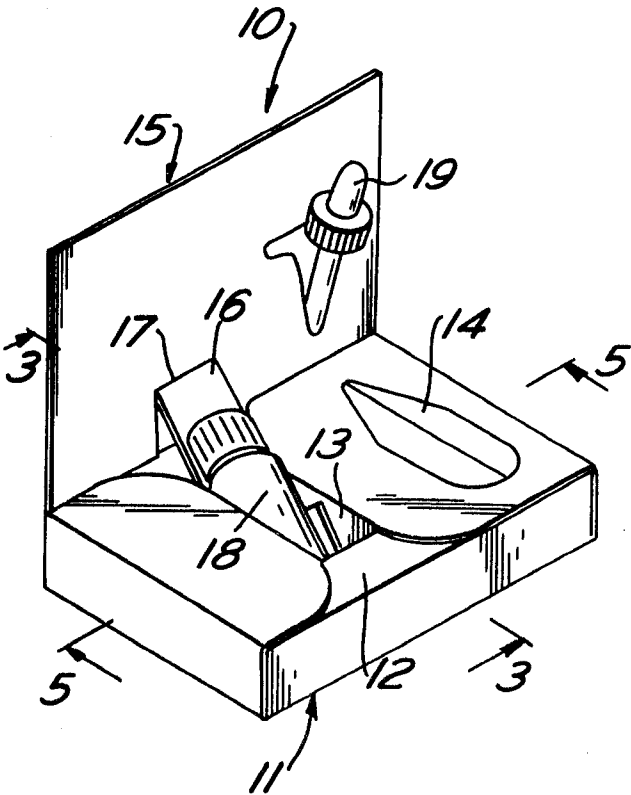
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[57] ABSTRACT

A container of stiff bendable sheet material cut, scored, folded and glued to provide a lower section having a platform formed with an upwardly opening cavity, a hinged upper section swingable into and out of overlying relation with the platform, and a tongue hingedly connected to and extending from the upper section and into the platform cavity for carrying an article of contents to raise and lower the latter upon opening and closing movement of the upper section.

7 Claims, 6 Drawing Figures



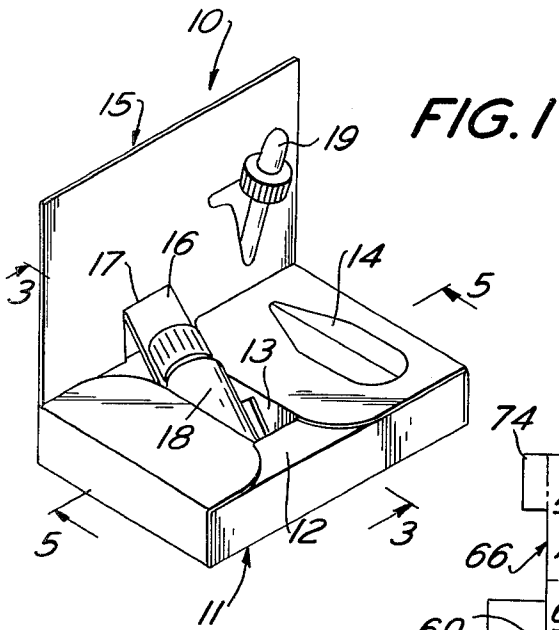
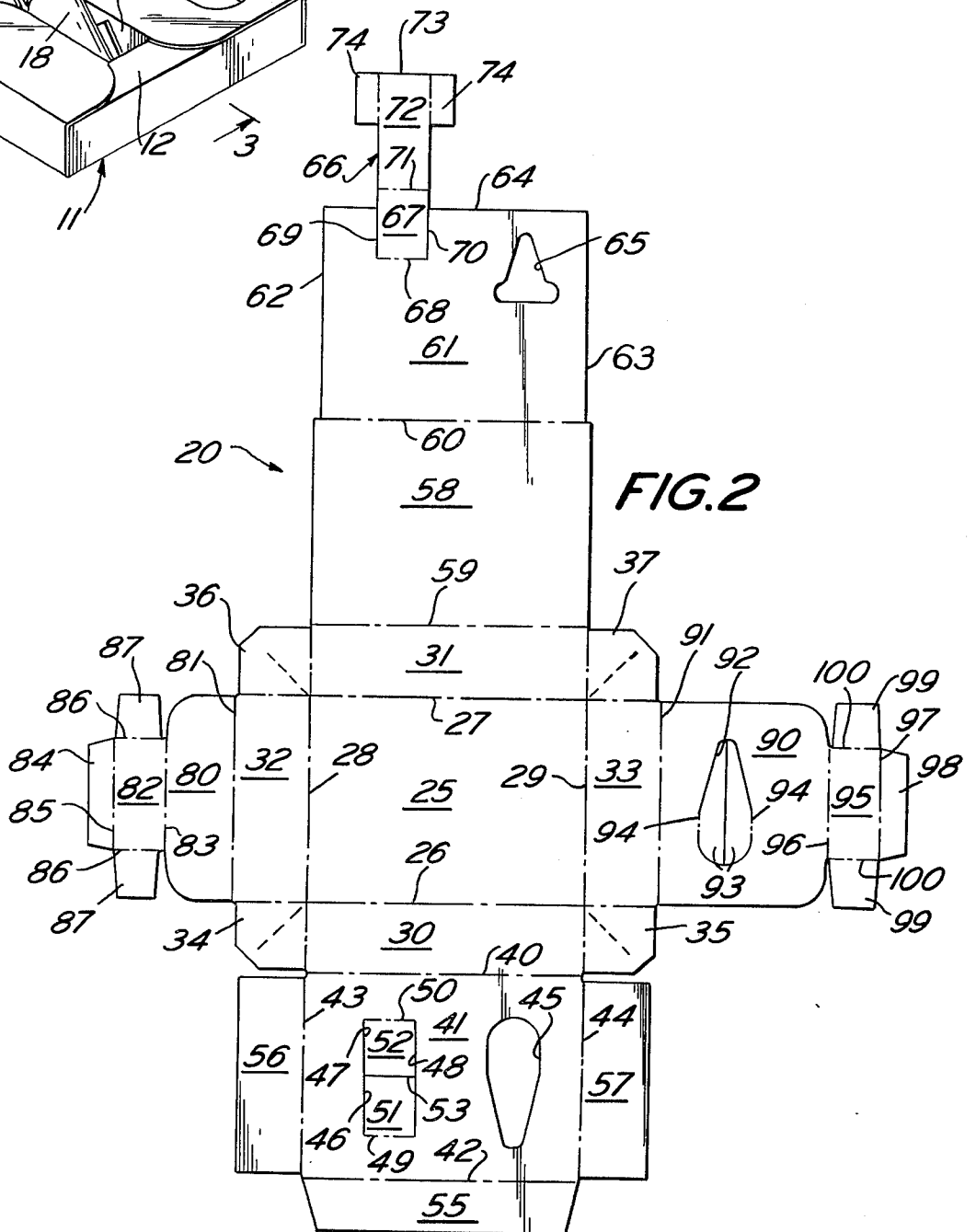


FIG. 3

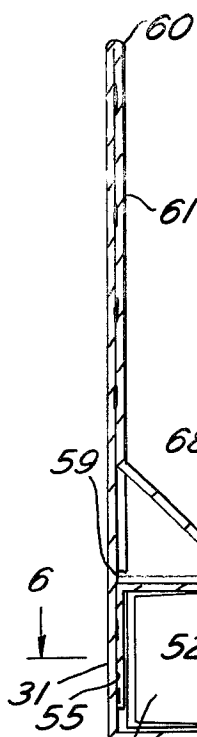


FIG. 4

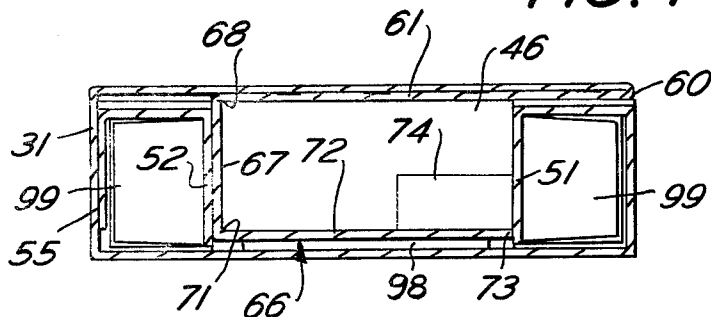


FIG. 5

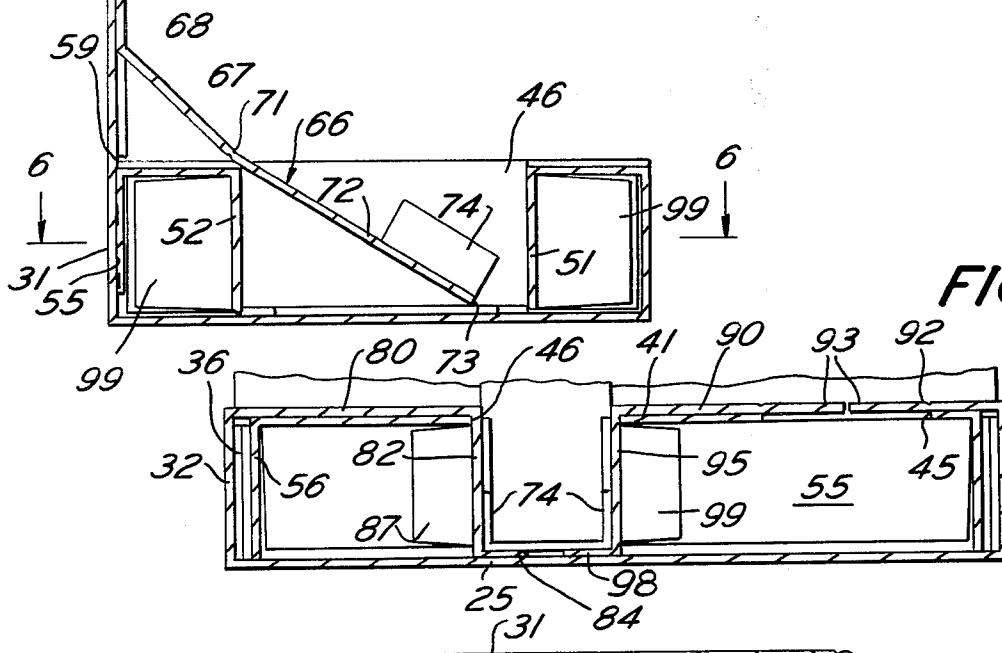
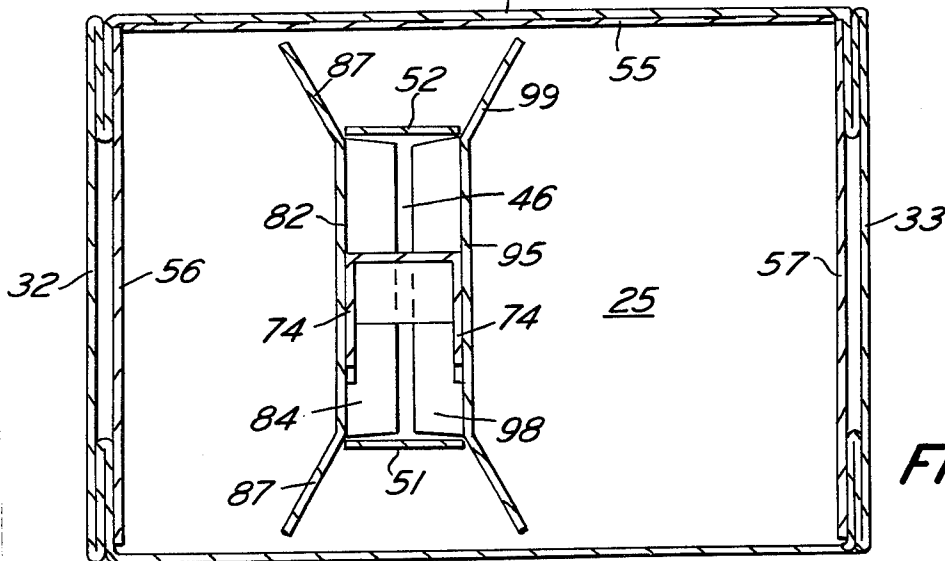


FIG. 6

POP-UP CARTON CONSTRUCTION

BACKGROUND OF THE INVENTION

As is well known to those versed in the art of packaging, there is a broad field of endeavor in mailable packages or containers requiring a high degree of protective ability to resist the abuses of handling in mailing, and also a wide area of activity in the provision of containers or packages affording easy access to and removal of the package contents.

In the past, undue expense in manufacture and filling, and complexity in construction was necessary to achieve the above-recited desiderata, prior attempts often resulting in sacrificed protectivity and doubtful reliability in operation.

SUMMARY OF THE INVENTION

Accordingly, it is an important object of the present invention to provide a container construction and blank therefor wherein are achieved a high degree of protectivity for withstanding even abnormal abusive conditions in handling and transit without damage to the container or its contents, and further wherein the contents is most attractively and conveniently presented to the user or opener of the package by popping up toward the user for enhanced visual and manual access thereto.

It is still a further object of the present invention to provide a container construction and blank therefor having the advantageous characteristics mentioned in the preceding paragraph, wherein the construction is extremely simple so as to be capable of manufacture from a single, one-piece blank requiring single side printing and affording ample copy space, while being quickly and easily set up and filled.

It is a further object of the present invention to provide a container construction of the type described wherein staunchness and durability is achieved without sacrifice of economy and versatility in attractive design.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.

The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a top, front perspective view showing a container construction of the present invention in an operative, open condition of use.

FIG. 2 is a plan view showing a blank adapted to be formed into the container of the present invention.

FIG. 3 is a sectional elevational view taken generally along the line 3—3 of FIG. 1, with the contents removed.

FIG. 4 is a sectional view similar to FIG. 3, but with the container closed.

FIG. 5 is a sectional elevational view taken generally along the line 5—5 of FIG. 1.

FIG. 6 is a horizontal sectional view taken generally along the line 6—6 of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now more particularly to the drawings, and specifically to FIG. 1 thereof, a container is there generally designated 10, and is illustrated in open condition as including a lower or bottom section 11 including an upper or top wall 12 defining a platform on the lower section. Provided in the platform 12 is an upwardly facing article receiver or cavity 13, and an additional platform receiver or recess 14.

Hingedly connected to the lower section 11 is an upper section 15, from which extends a tongue 16 depending into the platform cavity 13. That is, the tongue or extension 16 is hingedly connected, as at 17, to the upper section 15 and extends therefrom to terminate at a free distal end located interiorly of the cavity 13. The tongue 16 may carry a suitable article of contents 18, such as a bottle, as illustrated, or other, which article moves into and out of the cavity 13 upon swinging movement of the upper section 15 relative to the lower section 11 and platform 12. Additionally, another article of contents, such as a dropper 19, may be suitably carried by the upper section 15 for swinging movement therewith into and out of the platform recess 14.

Considering now the blank, generally designated 20, as shown in FIG. 2, which may advantageously be fabricated from a single sheet of stiff bendable material, such as cardboard, or other suitable material, as by conventional cutting and creasing or scoring procedures.

More specifically, the blank 20 may be composed of a generally rectangular main panel 25, operative in the container condition to define a lower section or bottom wall, and bounded within a pair of front and rear, generally parallel folds or score lines 26 and 27, and a pair of opposite side scores or fold lines 28 and 29, respectively extending between adjacent pairs of ends of the fold lines 26 and 27. Extending from the front and rear fold lines 26 and 27, being coextensive therewith, and thereby hingedly connected to the main lower section panel 25 are a pair of generally congruent auxiliary panels 30 and 31 respectively adapted to provide front and rear walls on the lower section. Additionally, a pair of generally rectangular auxiliary panels 32 and 33 are hingedly connected to and extend from opposite sides of the lower section panel 25 by fold lines or creases 28 and 29, being coextensive therewith. If desired, foldable gussets may be hingedly connected between the adjacent ends of auxiliary wall panels 30-33, as front gussets 34 and 35 connected between front auxiliary, wall panel 30 and respective side auxiliary wall panels 32 and 33, while similar, rear gussets 36 and 37 may extend between adjacent ends of rear auxiliary or wall panel 31 and respective auxiliary or wall panels 32 and 33.

Longitudinally coextensive with the front auxiliary or wall panel 30, and hingedly connected thereto, as by fold or crease 40, is a generally rectangular upper wall or platform panel 41. That is, the platform panel 41 is generally congruent to the lower section panel 25, and bounded within the pair of parallel, laterally extending folds or creases 40 and 42, and the parallel, forwardly and rearwardly extending folds or creases 43 and 44 which extend between respective adjacent pairs of ends of the fold or creases 40, 42. Spaced within the bounds of platform panel 41 is a specifically configured

through hole, opening or cutout 45. Also spaced within the bounds of platform panel 41 and spaced from the cutout or hole 45 is an additional cutout or hole 46, defined between a pair of generally parallel, forwardly and rearwardly extending cuts or slits 47 and 48, and a pair of generally parallel, laterally extending folds or creases 49 and 50, each extending between an adjacent pair of ends of cuts 47 and 48. Further, a cut 53 extends between medial regions of cuts 47 and 48, parallel to and spaced between folds 49 and 50. It will therefore be appreciated that there is formed of the material of platform panel 41 within the bounds of opening 46 a pair of tabs or legs 51 and 52 respectively hingedly connected to the panel by creases 49 and 50.

Additionally, the platform panel 41 may be provided along its bounding fold or crease 42 with a glue panel or flap 55 hingedly connected by the crease 42 to platform panel 41. Also, there may be provided along opposite sides of the platform panel, hingedly connected thereto by folds or creases 43 and 44, a pair of side flaps or panels 56 and 57.

Extending from the auxiliary wall panel 31 opposite to the platform panel 41 is a generally rectangular connection panel 58, being suitably hinged, as by fold line or crease 59 to the adjacent auxiliary panel 31. The connection panel 58 may be generally congruent with the lower section or bottom panel 25, and extending from its outer side, being hingedly connected thereto by a fold or crease 60, is an upper section panel 61, also generally rectangular and substantially congruent to panels 58, 25 and 41. The upper section panel 61 is bounded within the fold or crease 60, a pair of generally parallel side edges 62 and 63 extending from opposite ends of the crease 60, and an additional edge 64 extending between the distal ends of edges 62 and 63. Spaced within the panel bounds of crease 60 and edges 62, 63 and 64 is a specifically configured cutout or hole 65 located in general alignment with the cutout or hole 45 of platform panel 41, for purposes appearing presently. In addition, the upper section panel 61 is provided with an elongate extension or tongue 66 projecting beyond the panel edge 64. The tongue or extension 66 may be composed of a generally rectangular section or arm 67 having one end hingedly connected, as by fold line or crease 68 to the panel 61, the hinged connection 68 having its longitudinal direction or axis generally parallel to and spaced between the parallel fold 60 and edge 64. From the hinged connection 68, the tongue section or arm 67 extends between parallel side edges 69 and 70 to terminate at a hinged connection, fold or crease 71 located outward beyond and disposed generally parallel to the edge 64. The tongue 66 further includes an elongate section or carrier 72 extending from the outer end of arm 67 and hingedly connected to the latter by fold or crease 71. The carrier section 72 terminates at an outer end edge 73 and is provided on opposite sides, adjacent to the outer end edge with a pair of wings, gripping flaps or fingers 74, for purposes appearing hereinafter. It will be seen in FIG. 2 that the tongue 66 is generally in alignment with the opening 46.

The blank 20 further includes a cover panel 80, generally rectangular in configuration, extending outwardly from and hingedly connected to the side wall panel 32, as by crease or fold 81. A generally rectangular cavity wall or leg panel 82 is hingedly connected to and extends outwardly from the cover panel 80, as by

fold or crease 83, the leg or wall panel 82 being generally longitudinally dimensioned corresponding to the longitudinal dimension of cavity 46. Along the outer longitudinal edge of panel 82 is a flap 84 hingedly connected by a fold or crease line 85, and at opposite ends of the panel 82 are hingedly connected thereto, as by respective end folds or creases 86, generally rectangular end tabs or ears 87.

Extending oppositely outwardly from the other side wall panel 33, longitudinally coextensive therewith, is an additional cover panel 90 hingedly connected to the side wall panel by a fold or crease 91. Spaced within the bounds of cover panel 90 there is formed a cutout or opening 92 corresponding generally to the size and shape of platform panel hole 45. However, there are formed in the cutout 92 a pair of flaps 93 disposed in adjacent side-by-side relation, and configured to substantially completely occupy the cutout 92, each flap being hingedly connected, as by a fold line or crease 94, to a respective opposite side of the cutout.

Further, a generally rectangular cavity wall panel 95 extends outward from the cover panel 90, being hingedly connected thereto by a fold line or crease 96, and is of a length generally equal to that of cavity cutout 46. Extending outwardly from the cavity wall panel 95, being hingedly connected to the latter by a fold or crease 97, is a side flap 98, while a pair of opposite end tabs or ears 99 are hingedly connected to opposite ends of the wall panel 95 by respective folds or creases 100.

In setting up of the blank 20 to form the container 10, the platform panel 41 is swung into position spaced conformably over the lower section 25, as by flexure of hinge folds or creases 26 and 40, flap 55 being folded downward about its hinged connection 42 and panel 31 being swung upward about its hinged connection 27, so that flap 55 is in facing engagement with rear wall panel 31. Suitable adhesive means is applied to flap 55 and/or wall panel 31 for gluing of the same together in their facing engagement. The platform panel 41 is thus elevated and defines a platform spaced over the lower section or panel 25.

The tabs or cavity wall panels 51 and 52 are swung downward to provide front and rear walls of the cavity 46, and the platform end flaps 56 and 57 are swung downward toward the bottom section 25. The side wall panels 32 and 33 may then be swung upward, about respective hinged connections 28 and 29, simultaneously folding the gussets 34-37 inwardly between the associated pair of side walls 32, 33 and flaps 56, 57.

The cover panel 80 may then be swung inwardly about the axis of crease 81 to overlie the adjacent portion of platform 41, and the cavity wall panel 82 swung downwardly into the cavity 46. Thus, the cavity wall panel lines or defines a wall 82 along one side of the cavity 46, extending generally between the cavity end walls 51 and 52. The flap 84 may extend from the lower end of cavity side wall 82 generally inwardly of the cavity along the lower section or bottom wall 25; from opposite ends of the cavity side wall 82, obliquely outwardly therefrom, may extend the ears or tabs 87. Thus, the ears or tabs 87 function in the manner of struts or props rigidifying the overall structure, and defining generally upright spacers extending between the lower section or bottom wall 25 and platform 41, while retaining the cavity side wall 82 in position within the cavity 46.

The additional cover panel 90 may be swung to overlie the region of platform 41 between side wall 33 and cavity 46, with the cutout 92 congruently overlying the platform hole 45. Thus, the flaps 93 of cutout 92 are deflectable into the hole 45 to extend beneath the platform 41. The hingedly connected cavity side wall panel 95 may be swung about fold 96 downwardly into cavity 46, defining a longitudinal wall thereof, with flap 98 extending into the cavity generally along the bottom wall or lower section 25, and the end tabs or ears 99 extending obliquely from the cavity wall 95 beneath the platform 41. Here also, the tabs or ears 99, in the same manner as tabs or ears 87, extend generally upright between the bottom wall or lower section 25 and platform 41, to rigidify the spaced elevation of the latter, while retaining the cavity side wall 95 in position.

Further to the filling and setting up operation, an article of contents, such as a dropper 19, see FIG. 1, or other desired article may be placed on the panel 58, over which may be located a thermoplastic film, and the upper section panel 61 swung about its hinged connection 60 to overlie the plastic film with the article of contents protruding through the specifically configured cutout or holes 65. If desired, panel 61 may be glued to panel 58 without an intermediate sheet and the article 19 slipped between the panels, as illustrated. In this manner, the article of contents 19 is secured in the package, and the upper section 61 now hingedly connected to the lower section and swingable about the axis of fold line 59 into and out of overlying relation with the platform 41. In this condition, the hinged connection 68 of tongue 66 will be located in adjacent parallel spaced relation with respect to the hinged connection 59 for extension of the tongue into the cavity 46, as best seen in FIGS. 3-6. That is, the free end of tongue 66, specifically the portion adjacent to end edge 73, together with clasping tabs or fingers 74, is located in the cavity 46 and movable therein between the upstanding exposed or open condition of FIG. 3 and the lowered, concealed condition of FIG. 4. That is, in the open condition of FIG. 3, the tongue 66 is swung with the upper section 61 to the raised position, and shifted downwardly upon closing movement of the upper section to the lowered position. Thus, upon mere upward opening and downward closing movement of the upper section 61, an article of contents 18, such as a vial, or the like, will be shifted upward for attractive visual access and convenient manual removal, as well as automatic return to its lowered, concealed position. Further assuring this raising and lowering of the article 18 is the relationship of grasping fingers 74, which frictionally engage on opposite sides of the article to maintain the latter in position on the tongue 66. Further, the fingers 74 are held in their vial engaging relation by the cavity side walls 82 and 95 which are, in turn, held against outward movement by the action of ears 87 and 99. That is, the ears 87 and 99 effectively prevent undue outward movement of cavity side walls 82 and 95, to maintain the latter in limiting engagement with grasping fingers 74, so that the fingers frictionally retain the article 18 while sliding along the cavity side walls 82 and 95 upon upward and downward movement of tongue 66. Of course, the article of contents 18 may be manually removed from and replaced in position between fingers 74, as desired.

Simultaneously with raising and lowering of the article of contents 18, the article of contents 19 is raised

and lowered with the upper section 61, moving in its lowered position downwardly against resiliently deflectable flaps 93 and into the platform hole 45.

While there was described hereinbefore the interposition of a plastic film between panel 58 and upper section 61, this may be a preformed blister, if desired, and the panel and section suitably secured together. While the ears 87 and 99 effectively lock the cavity walls 82 and 95 in position, and further insure squareness to the structure, the folded gussets 34-37 and their resilience serve to further enhance the staunchness of the device without requiring undue reinforcement and gluing.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention.

What is claimed is:

1. A container construction comprising a lower section, a raised platform carried by said lower section, said platform having an opening defining an upwardly facing cavity, an upper section swingably connected to said lower section for movement into and out of overlying relation with said platform, a tongue swingably connected to and extending from said upper section into said cavity for movement into and out of the latter upon upper section movement into and out of said overlying relation, whereby an article of contents located in said cavity is movable with said tongue out of and into said cavity upon upper section movement out of and into said overlying relation, a pair of cover members extending from opposite sides of said lower section over said platform and inwardly toward said cavity, a leg depending from each cover member into the adjacent region of said cavity, and ears on said legs extending angularly therefrom into spacing relation between said lower section and platform.

2. A container construction according to claim 1, said legs each extending a substantial distance along a respective side of said cavity to define opposite cavity walls maintained in position by said ears, and fingers on opposite sides of said tongue adjacent to respective cavity walls for holding engagement with the article of contents.

3. A container construction according to claim 2, said container construction being entirely of sheet cardboard.

4. A container construction according to claim 2, said container construction being formed of a one-piece blank.

5. A container construction according to claim 4, said upper section comprising a backing member hingedly connected to said lower section, a face member in facing relation with said backing member and carrying said tongue, said face member having a through cutout for receiving an additional article of contents on said upper section, said platform being recessed to receive said additional article of contents.

6. A container blank fabricated of a single sheet of stiff bendable material and comprising: a main panel defining a lower section, a plurality of auxiliary panels hingedly connected to said main panel and swingable relative thereto to define a peripheral wall, a platform hingedly connected to one of said auxiliary panels and swingable relative thereto to overlie said main panel and define a platform, said platform having a through hole defining a cavity in said platform, an upper section

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hingedly connected to another of said auxiliary panels
for swinging movement toward and away from said
platform panel in its platform defining relation, a
tongue swingably connected to said upper section
panel and having its distal end engageable in the cavity
defined by said platform panel for movement therein
upon swinging movement of said upper section panel,
a pair of cover panels respectively hingedly connected
to another pair of said auxiliary panels for swinging
movement into overlying relation with said platform

defining panel on opposite sides of said platform cavity,
and a pair of leg panels hingedly connected to respec-
tive cover panels and extendable into said platform
cavity upon opposite sides thereof.

7. A container blank according to claim 6, in combi-
nation with ear tabs hingedly connected to said leg pan-
els for angulate extension therefrom in spacing relation
between said lower section defining main panel and
platform defining platform panel.

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