United States Patent [19]

Troth

[11] **3,746,242**

[45] **July 17, 1973**

[54] **COMBINATION FOLDED CONTAINER**

[75] Inventor: **John S. Troth,** Wilmington, Del.

[73] Assignee: **Pamark, Inc.,** Montchanin, Del.

[22] Filed: **June 9, 1971**

[21] Appl. No.: **151,229**

[52] **U.S. Cl.** ..... **229/23 R,** 206/45.34, 229/38 R

[51] **Int. Cl.** **B65d 11/20,** B65d 13/00

[58] **Field of Search** ..... 229/23 R, 38; 206/DIG. 29, 45.34

[56] **References Cited**

UNITED STATES PATENTS

3,608,705	9/1971	Moshel	229/23 R
1,992,087	2/1935	Miller et al.	229/23 R X
2,190,443	2/1940	Palmer	229/23 R X
2,233,207	2/1941	Gillam	206/45.34
2,655,260	10/1953	Clerc	229/23 R X
2,873,023	2/1959	Erickson	206/45.34
3,380,575	4/1968	Hennessey	206/45.34

FOREIGN PATENTS OR APPLICATIONS

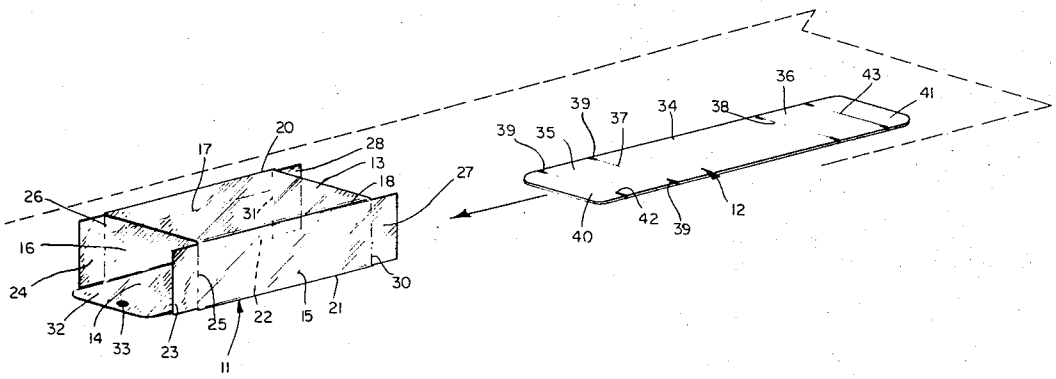
695,706	8/1953	Great Britain	206/45.34

Primary Examiner—Davis T. Moorhead
Attorney—Paul & Paul

[57] **ABSTRACT**

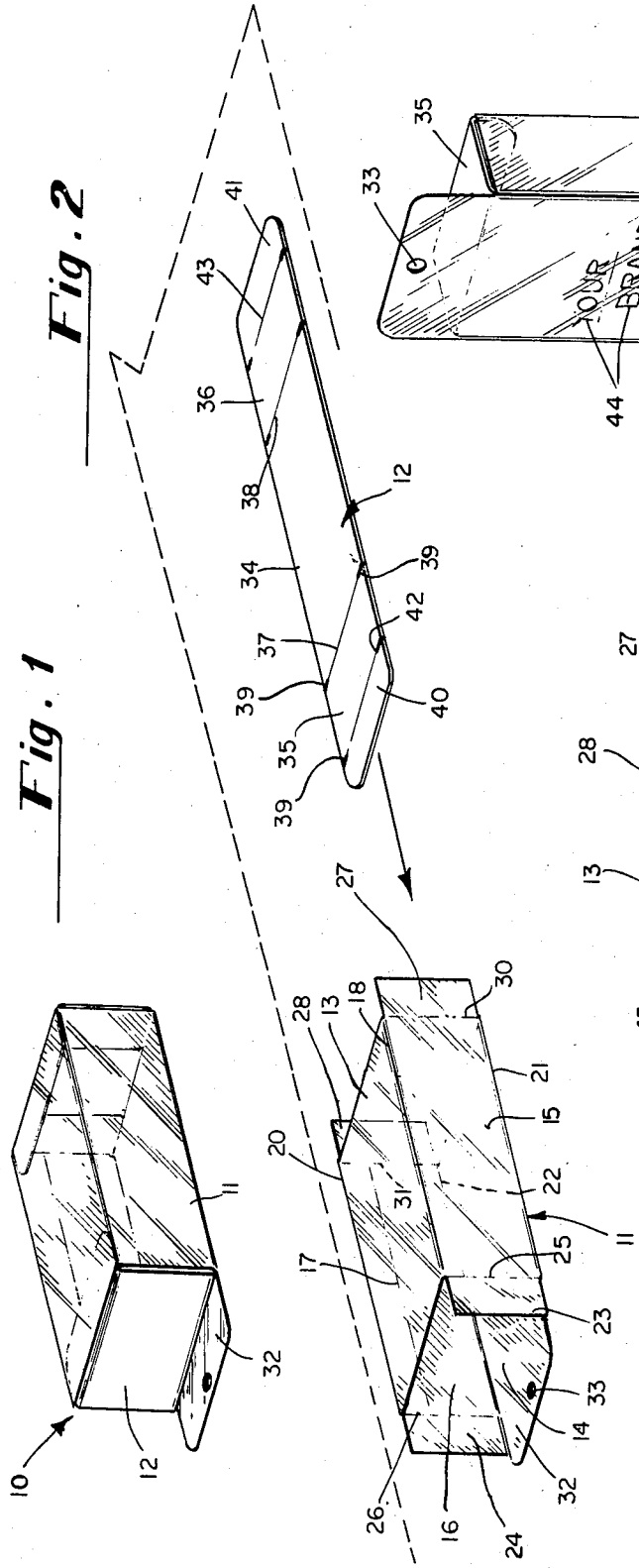
A folded container is provided, which is a combination of at least two separate pieces, one of which is of folded sheet plastic or like construction, and the other of which is of paperboard or like construction. The sheet plastic portion is folded essentially into a sleeve, and the paperboard portion is folded to close at least one end of the sleeve and to form a tuck flap. The combination enjoys the ease of printability of paper, along with other features, such as the transparency of plastic, and is a highly economical combination of materials.

11 Claims, 9 Drawing Figures



Patented July 17, 1973 3,746,242

3 Sheets-Sheet 1



INVENTOR.
John S. Troth

BY Paul & Paul

ATTORNEYS.

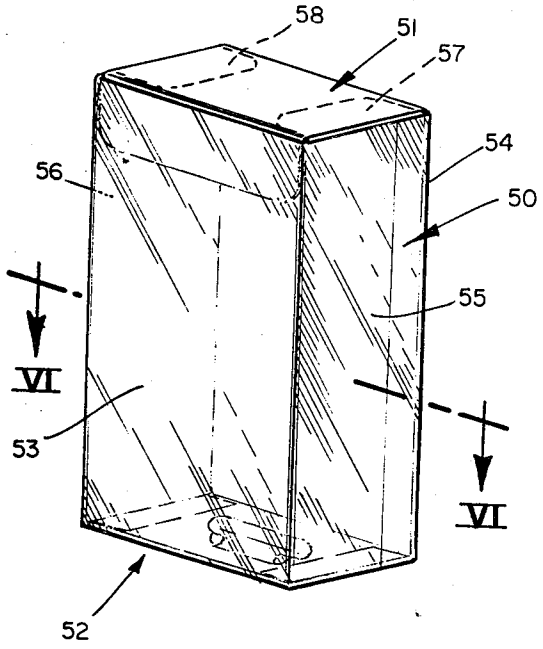


Fig. 5

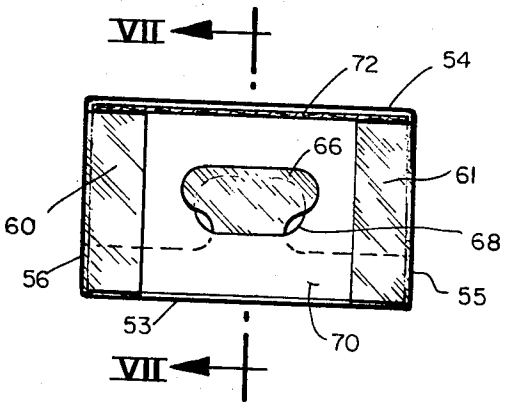


Fig. 6

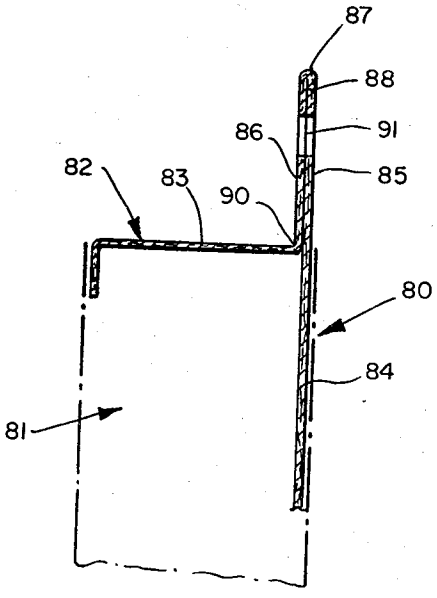


Fig. 8

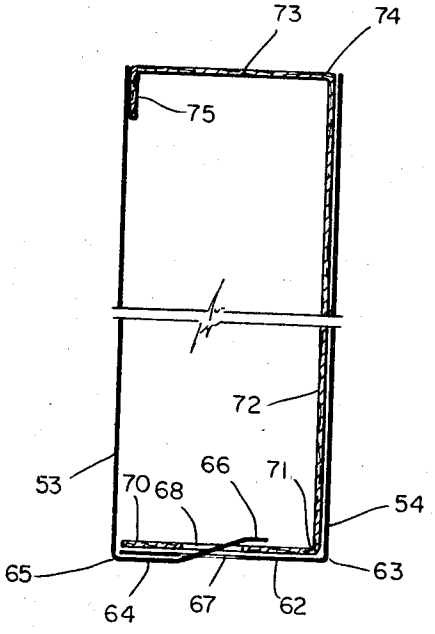


Fig. 7

INVENTOR.
John S. Troth

BY

Paul & Paul

ATTORNEYS.

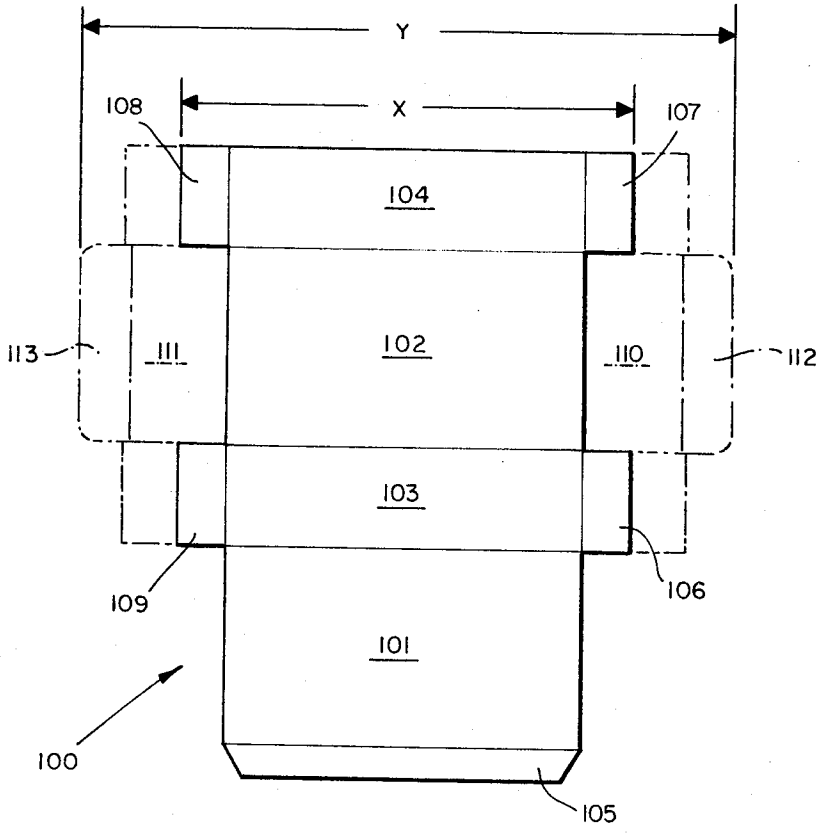


Fig. 9

INVENTOR.
John S. Troth

BY
Paul & Paul
ATTORNEYS.

COMBINATION FOLDED CONTAINER

BACKGROUND OF THE INVENTION

In the prior art, it is known to make folded containers of paperboard construction. Numerous types of such containers have been made, and in fact, the formation of containers of paperboard, by assembling folded blanks along preformed fold lines has become a highly developed art. This development of the art has evolved with a view toward the high speed folding of paperboard blanks, into container or carton form, by the use of high speed machinery, as well as by the use of high speed printing, whereby advertising, pictorial representation, and other indicia may be printed on the paperboard, at relatively high speeds, particularly because of the inherent characteristics of paperboard to absorb ink or the like that is used in a printing process. Thus, the use of paperboard printed containers has long been highly desirable.

In the recent past, several attempts have been made to replace paperboard with sheet plastic, in the construction of folded blank containers. Several problems have developed in attempting to do so. Such problems include the inherent memory of plastic and the resistance to bend along fold lines, sealing difficulties with glue flaps, high speed folding and handling of plastic containers, and the printing or placement of indicia on sheet plastic container panels, among other problems.

Many of the above-enumerated problems attendant to the use of sheet plastic material for folding carton construction have been overcome, at least to some degree. However, the problem of the printability of sheet plastic has not been completely resolved. Moreover, the foldability of sheet plastic tuck flaps is still resisted by the memory of the plastic, unless especially configured fold lines are utilized. Furthermore, the material cost of sheet plastic is very high in comparison to that of other materials.

In some instances, plastic members, such as in tubular form, have had for example a lower end constructed of cardboard, which would generally be of disk-like configuration, disposed inwardly or over the end of a plastic tube, either seated in a ring-like groove thereof, or sealed thereto. However, the utilization of such has been extremely limited, in that the same lacks the facility for permitting the opening and reclosing of such tubular end, and furthermore, all of the weight of an article contained therein would rest upon such a cardboard end, with there being little facility for distributing the weight of the matter contained within the container, except at the periphery of the disk-like insert. Also, the ability for such an end cover to provide a medium for advertising, or otherwise bearing indicia was severely limited, if indeed at all present.

SUMMARY OF THE INVENTION

The present invention is directed toward providing a solution to the above-enumerated and other problems, by providing a combination container, utilizing essentially a sleeve of sheet plastic construction, and at least one end with an associated tuck flap, and preferably having a backing panel, for insertion into the sleeve, for closing at least one end of the sleeve. This combination facilitates an ease of closing as well as reopening of the end flap, in that the same is paperboard, as well as providing surfaces for readily accepting printing. Also, preferably, the sleeve may be of transparent sheet plastic construction, in order to permit visibility of printed indicia on the paperboard component of the combination therethrough.

Accordingly, it is a primary object of this invention to provide a novel combination container, having a body of folded sheet plastic construction and having at least one end panel with an associated foldably connected tuck flap of paperboard construction.

It is another object of this invention to accomplish the above object, wherein the paperboard component of the combination also has a foldably connected backing panel disposed inwardly of the plastic component.

It is a further object of this invention to accomplish either of the above objects, wherein the plastic body component is transparent for the external observation of printing or other indicia on the paperboard component, through the plastic body component.

It is another object of this invention to accomplish any of the objects set forth immediately above, wherein the paperboard component has an opposite end panel that lies adjacent a plastic end panel and becomes locked thereto by a plastic locking tab.

It is another object of this invention to accomplish any of the above objects, wherein the paperboard component includes a riser card protruding outwardly of the container, for either display purposes, or for facilitating the hanging of the container, or both.

It is a further object of this invention to accomplish any of the above objects, wherein the end panel having a foldably connected tuck panel is locked with inwardly folded plastic tabs carried by the folded plastic construction.

It is another object of this invention to provide a novel combination container wherein one component is of folded sheet plastic construction, folded into a sleeve-like arrangement, and having a paperboard component received therein, with the paperboard component having opposite end panels, at least one of which is provided with a foldably connected tuck panel, with the opposite end panels being connected by a backing panel, for distributing the weight of articles carried within the container, by the engagement of cardboard end panels with inwardly folded plastic tabs, particularly when the combination container is to be hung from a tuck or the like, with an object or more contained therein.

Other objects and advantages of the present invention will become readily apparent to those skilled in the art from a reading of the following brief description of the drawing figures, detailed descriptions of the preferred embodiment and the appended claims.

IN THE DRAWINGS

FIG. 1 is a perspective view of a combination container construction in accordance with this invention.

FIG. 2 is an exploded perspective view of the folded sheet plactic component, and the paperboard component that comprises the combination container illustrated in FIG. 1.

FIG. 3 is a perspective view of the container of FIG. 1, after insertion of the paperboard component into the sheet plastic component, but prior to closing the ends of the container by insertion of the tuck flaps into the sheet plastic sleeve.

FIG. 4 is a rear perspective view of the container of FIG. 1, wherein printing or other indicia on the paper-

board component is visible through the sheet plastic component.

FIG. 5 is a perspective view of an alternative embodiment of the combination container of this invention, wherein a locking arrangement for the lowermost end panel is illustrated.

FIG. 6 is a transverse sectional view taken generally along the line VI—VI of FIG. 5, and wherein the lower end panel locking construction is more clearly illustrated.

FIG. 7 is a cross-sectional view of the container of FIG. 6, taken generally along the line VII—VII of FIG. 6, and wherein the lower and upper closures are also illustrated.

FIG. 8 is a fragmentary view of another alternative embodiment of this invention, generally similar to that of FIG. 7, but wherein a riser card is illustrated protruding outwardly of the combination container, the container otherwise being constructed generally similar to that of FIG. 7.

FIG. 9 is a plan view of the plastic blank adapted for folding to effect a plastic sleeve of the type illustrated at the left-most end of FIG. 2, such being illustrated in full lines, with there being illustrated in phantom lines the approximate sheet plastic material saving over and above the amount of sheet plastic that would have been utilized if the entire container were constructed to be of one-piece sheet plastic, as would be seen by the phantom line illustration thereof.

Referring now to the drawings in detail, reference is first made to FIGS. 1 through 3, wherein there is illustrated a combination folded container, generally designated by the numeral 10, and including a first component or piece 11 of folded sheet plastic construction, and an insert 12 of paperboard construction.

The plastic component 11 may be of polyvinylchloride or other plastic. The plastic piece 11 is constructed as a sleeve, as illustrated in the left-most end of FIG. 2, to have front, rear and side panels 13, 14, 15 and 16, respectively, with the panel 16, for example, being provided with an appropriate seam 17 for securing a panel portion foldably connected to the rear panel 14 to a portion of the side panel 16 that is foldably connected to the front panel 13, as by gluing, solvent sealing, heat sealing or the like. The panels 13, 14, 15 and 16 are thus connected together, to be integral, along fold lines 18, 20, 21 and 22.

A pair of short closure tabs 23 and 25 are provided at the left-most end of the plastic container component 11 as viewed in FIG. 2, foldably connected thereto along suitable fold lines 25 and 26, for folding inwardly, only partially across the open end thereof, as illustrated in FIG. 3. Similarly, tabs 27 and 28 are provided at the opposite end of the container component 11, foldably connected to panels 15 and 17 along respective fold lines 30 and 31.

The rear panel 14 is provided with an integral coplanar extension 32 that protrudes outwardly of the container 10 as illustrated in FIG. 1, for the purpose of providing a hanging hole 33 therein, if desired.

It will be observed that the container component 11 is of transparent plastic construction.

The paperboard component 12 of the container 10 may be of any desired construction, and included within the term "paperboard," may be paper, heavy paper, cardboard, or the like, or even plastic foam, either alone or laminated to paper or other material, and having at least some of the desirable qualities of paperboard mentioned herein. In any event, the component 12 may comprise a backing panel 34, with closure panels 35 and 36 foldably connected thereto along respective fold lines 37 and 38, and with tuck panels 40 and 41 respectively connected to the closure panels 35 and 36, along respectively associated fold lines 42 and 43. Slits 39 are provided through opposite ends of the fold lines 37, 38, 42 and 43, extending slightly inwardly thereof as illustrated. Indicia 44 may appear in any desired location along the member 12, for example, on the back of the backing panel 34 thereof, visible through the transparent panel 14 of the plastic member 11, if desired, as illustrated in FIG. 4, or on the front of the tuck panels 40 and 41, visible through the panel 13 (not shown).

The combination container 10 is assembled by inserting the paperboard component 12 into the plastic component 11, as illustrated in FIGS. 2 and 3, with the tab panels 23, 24, 27 and 28 being folded inwardly as illustrated in FIG. 3, and with the closure panels 35 and 36 being folded inwardly also, but to be disposed outwardly of respectively associated ones of the tabs 23, 24, 27 and 28, and with the tuck panels 40 and 41 being folded into the sleeve provided by the panels 13, 14, 15 and 16, to be disposed against the inside of the panel 13, maintained thereagainst by frontal edges of the tabs 23, 24, 27 and 28, such as the frontal edge 45 of the tab 23, for example. The frontal edges and rearward edges 49 of the tabs lockingly engage the slits 39 at the four corners of each of the panels 35 and 36 upon inward folding of the tuck panels 40 and 41 as in FIG. 4.

The resultant arrangement will be as illustrated in FIG. 4, whereby various articles, such as hardware of the nail or tack type may be packaged in the combination container 10, with the articles readily visible through the transparent plastic sleeve 11, but with indicia, advertising, printing or the like also being readily visible through selected ones of the panels, or from above, or below, if the indicia or the like is on outer surfaces of the panels 35 or 36, for example (not shown), as desired. Also, the container 10 may be hung on a rack or the like as desired, by the use of the hanging hole 33 carried on a suitable rod, nail or the like.

It will be apparent that a combination package of the type above-described may be used for the packaging of many types of articles, where display is desirable, but where some type of packaging is also desirable, such as the packaging of children's toys, toothbrushes, hairbrushes and the like, in addition to the packaging of strictly utilitarian objects, such as hardware. The advantages of using plastic, such as the ability to make the sleeve-forming member 11 to be transparent, as well as the ability to provide a strong basic container in an economical manner are herein provided, along with advantages of using a paperboard portion such as the ability of providing a surface for readily accepting printing or other techniques for applying advertising, indicia and the like to the cardboard component 12, with the additional advantage that such indicia is protected from discoloration or the like in that the surface embodying the same may be protected from the environment by a transparent plastic sheet, such as in the manner illustrated in FIG. 4, thus become apparent. Thus, it is apparent that there is an important feature of cooperation between the paperboard element 12 and the plastic element 11. Even further, there are additional advantages,

such as the ease of openability and the like, for a closure such as that **35**, for the container **10** illustrated in FIG. **4**, that are attendant to the use of a paperboard closure, rather than the use of a plastic type of closure. It will further be noted that the presence of the inwardly bent tabs **23, 24, 27** and **28**, cooperate with the end closure members **35** and **36** in order to prevent a filled container of the type of **10**, that is hanging by a hook in engagement with the hole **33**, for example, for causing the paper board member **12** from sliding downwardly outwardly of the sleeve member **11** if the material contained within the container **10** is heavy. Such outward sliding is, of course, prevented by the interengagement between end closure panels **35** and **36**, and associated adjacent tabs such as that **23**. This is most particularly true when slits **39** are utilized for interengagement with tab edges as aforesaid.

Referring now to FIGS. **5, 6** and **7**, in detail, it will be noted that there is provided another plastic sleeve-like container, generally designated by the numeral **50**, that cooperates with a paperboard insert generally designated by the numeral **51**, to provide another embodiment of a combination container **52**. The plastic component **50** is constructed to have front, rear and sidewalls generally similar to that of the embodiment discussed above, the hence the same will have a front wall **53**, a rear wall **54**, and sidewalls **55** and **56**.

The sleeve-like member **50** is provided with tab panels **57** and **58**, as illustrated, at the upper end, and similar tab panels **60** and **61**, as illustrated in FIG. **6**, at the lower end, that cooperate with closure portions of the container, in the same manner as above-described for the first embodiment of this invention. However, the sleeve-like member **50** is also provided with an integrally connected bottom closure member, of plastic construction, **62**, illustrated most clearly in FIG. **7**, that is connected to the rear panel **54**, along a fold line **63**, and provides an additional closure panel. Also, a locking closure panel **64** is provided (FIG. **7**) foldably connected along a fold line **65** to the front panel **53**, and is provided with an integrally connected tab **66** that extends upwardly through slotted holes **67** and **68** in plastic panel **62** and in paperboard lower closure panel **70**. This is best illustrated in FIGS. **6** and **7**. The lower closure panel **70** is foldably connected along a fold line **71** to a paperboard backing panel **72** of the paperboard insert **51**. Similarly, an upper closure panel **73** is foldably connected along a fold line **74** to the paperboard backing panel **72**. However, in the embodiment of FIGS. **5** through **7**, only the upper closure panel **73** is provided with a tuck flap **75** inserted into the sleeve-like plastic member **50**, against the internal surface of the front panel **53** thereof.

It will thus be seen that, aside from an alternative lower closure arrangement, the container **52** is generally similar to that **10** earlier described herein.

With reference to FIG. **8**, a container generally similar to that **52** is illustrated, but which is herein identified generally by reference numeral **80**, as comprising a folded sheet plastic member **81**, like the member **50** illustrated in FIG. **5**, and having a paperboard insert **82**, also substantially identical to that **51** of FIG. **5**, but wherein, between the upper closure panel **83** and the backing panel **84**, there are provided additional panels **85** and **86**, integral with each other and with panels **83** and **84**, as illustrated in FIG. **8**, and folded back upon themselves along an upper fold line **87**, and which may, if desired, be adhesively secured together along mating surface **88**, if desired. The panel **85** is a coplanar extension of the panel **84**, and the panel **86** is foldably connected to the panel **83** along a fold line **90**. A hanging hole **91** is provided, extending through each of the panels **85** and **86**, as illustrated in FIG. **8**, for hanging the container **80** from a hook, or the like. The protrusion defined by the panels **85** and **86** may be referred to as a "riser card," and may embody advertising or other indicia thereon, in addition to functioning as a hanging tab. Also, while such is not shown in the drawings, if desired, an additional separate paperboard component or the like may be adhesively or otherwise secured between the two panels **85** and **86**, and such may have any desired proportions, such as being even higher than the fold line **87** illustrated in FIG. **8**, and may even be wider than the container **80**, as for example when measured in the direction of the fold line **90**, if desired.

With specific reference to FIG. **9**, there is illustrated in plan view a blank generally designated by the numeral **100**, whereby in some of the lines there is illustrated a formation that would construct the component **11** illustrated in FIG. **2**, of sheet plastic construction, as comprising front and rear panels **101** and **102**, side panels **103** and **104**, a seam panel **105**, and tab panels **106, 107, 108** and **109**, all foldably connected along fold lines as illustrated. In phantom, there is illustrated the way such blank **100** would look if the blank **100** were constructed to make a container (not illustrated), completely of one piece sheet plastic construction, whereby end closure panels **110** and **111** would be provided, foldably connected to a panel **102**, and having tuck panels **112** and **113** foldably connected to panels **110** and **111**, respectively. Also, the tab panels **106, 107, 108** and **109** would be extended as illustrated in phantom. The dimension Y indicates the approximate width of sheet plastic that would be required, in order to cut out the blank for a one-piece container construction. The dimension X indicates the width of material that is required for the blank illustrated in full lines in FIG. **9**, to effect a container component **11** such as that illustrated in FIG. **2**. It will be readily apparent that a substantial saving in sheet plastic material would be achieved, in that the greatest width-wise dimension illustrated in full lines in FIG. **9**, would be from tab panel end to tab panel end across the blank. Without the presence of plastic tuck panels **113** and **112**, and plastic end panels **110** and **111**, it becomes necessary and even desirable to cut back the tab panels **106, 107, 108** and **109** as illustrated, in order to further effect material savings. It will be noted that, if the blank **100** is constructed to be of the width Y, there is no need to cut back the tab panels as illustrated in full lines in FIG. **9**, but that, without the panels **110, 111, 112** and **113**, such cut-back may be effected, without substantially inhibiting the locking function of the tab panels with paperboard end panels.

The value of such material savings becomes very substantial, especially in that a width of sheet plastic substantially one half the width that would be required to make a one-piece complete-container-blank may be utilized. A conservative estimate that may be achieved in saving of sheet plastic material would be that a 40 percent saving would generally be possible. Considering that the plastic material is substantially more expensive than that of paper, even the total cost of a two-piece construction such as that illustrated in FIGS. **1**

through 3 would result in a substantially reduced material cost over and above that of a one-piece complete-container-blank illustrated in phantom lines in FIG. 9.

It is believed that the various embodiments of the invention described herein should be considered to be exemplary only, in that various modifications may be made in the details of construction, as well as in the use and functioning of the combination container set forth herein, as may be covered in the appended claims.

What is claimed is:

1. A folded container constructed of at least two pieces, wherein a first said piece is of folded sheet plastic material and comprises a sleeve of plastic with panels folded along fold lines and with a seam being provided securing portions of said sleeve together to form a seam of said sleeve, with a second said piece being of paperboard material and being disposed in at least one end of said sleeve to provide a paperboard end panel therefor, with said paperboard end panel having a paperboard tuck panel connected thereto along a tuck fold line, with said tuck panel disposed inside said plastic sleeve along a portion of a panel thereof, wherein said paperboard second piece is provided with a backing panel connected to said paperboard end panel along a fold line substantially parallel to said tuck fold line, with said backing panel being disposed within said sleeve adjacent and along at least a substantial portion of the area of a sleeve panel thereof, wherein said plastic sleeve comprises front, rear and opposite side panels with said tuck panel being disposed along a front panel, with tabs being provided, foldably connected to said plastic sleeve sides and extending inwardly and adjacent said paperboard end panel in locking relation with said tuck panel.

2. The container of claim 1, wherein said paperboard backing panel is provided with said foldably connected end panels and tuck panels at each end of said sleeve, in locking engagement with inner, adjacent tabs of said sleeve.

3. The container of claim 1, wherein said sleeve is of transparent plastic construction.

4. The container of claim 1, including a hang tab comprising an integral part of said sleeve and extending outwardly of said container, coplanar with and as an extension of a said sleeve panel.

5. The container of claim 1, wherein said tab panels are lockingly engaged with slits at corners of said paperboard end panel.

6. The container of claim 1, wherein said sleeve is of transparent plastic construction, including a riser card comprising an extension of said piece of paperboard material, extending outwardly of said container, substantially coplanar with said backing panel.

7. The container of claim 1, wherein said backing panel is provided with an additional end panel foldably connected thereto along a fold line at an opposite end thereof from said first-mentioned end panel, and being integral therewith, said additional panel being provided with an end-tab-receiving perforation, and wherein an end panel is provided as an integral part of said sleeve and is foldably connected to one of said sleeve panels along a fold line thereof in transverse disposition for closing one end of said sleeve in adjacent relation against said additional panel of said paperboard second piece and also having an end-tab-receiving perforation aligned with that of said additional panel of said paperboard second piece, and wherein an additional end panel having a locking tab is provided as an integral part of said sleeve connected to a panel thereof along a fold line thereof and disposed with its locking tab in locking engagement with said end-tab-receiving perforations.

8. The container of claim 1, including means for locking together a paperboard panel with two sleeve panel portions.

9. A two piece folded container comprising a first member of transparent plastic construction in the configuration of an integral sleeve, with longitudinally parallel fold lines connecting panels thereof, and a second insert member of paperboard construction disposed within said sleeve, said insert member being of integral construction and comprising an end panel disposed transversely of said fold lines and covering an end of said sleeve and having a tuck panel and a backing panel foldably connected along fold lines thereof and extending longitudinally into said sleeve against adjacent said sleeve panels, wherein said plastic sleeve comprises front, rear and opposite side panels with said tuck panel being disposed along a front panel, with tabs being provided, foldably connected to said plastic sleeve sides and extending inwardly and adjacent said paperboard end panel in locking relation with said tuck panel.

10. The container of claim 9, including indicia on said insert member visible through an overlying said transparent panel of said first member.

11. A two piece folded container comprising a first member of transparent plastic construction in the configuration of an integral sleeve, with longitudinally parallel fold lines connecting panels thereof, and a second insert member of plastic foam construction disposed within said sleeve, said insert member being of integral construction and comprising an end panel disposed transversely of said fold lines and covering an end of said sleeve and having a tuck panel and a backing panel foldably connected along fold lines thereof and extending longitudinally into said sleeve against adjacent said sleeve panels, wherein said plastic sleeve comprises front, rear and opposite side panels with said tuck panel being disposed along a front panel, with tabs being provided, foldably connected to said plastic sleeve sides and extending inwardly and adjacent said foam end panel in locking relation with said tuck panel.

* * * * *