The embodiments of the present invention provide a blank of foldable material that configured to form a container. When formed, the container is completely self-locking. The blank is configured to form a container that includes four corner posts. Each corner post includes multiple wall thickness and a top panel. The multi-wall corners provide increased strength. Further, each respective top panel maintains the corner walls relative positions. Cut-outs are formed in the side and/or end panel to allow easy access to good placed in the container. This blank and container design is useful for storing and displaying good in wholesale or retail markets, as well as elsewhere.
MULTI-POST CONTAINER AND CONTAINER BLANK

FIELD OF THE INVENTION

[0001] This invention relates generally to cellulose based blanks and containers and, more specifically to wood cellulose based blanks and containers used for storing and displaying goods.

BRIEF DESCRIPTION OF THE DRAWINGS

[0002] Various embodiments of the present invention are described in detail below with reference to the following drawings.

[0003] FIG. 1 is a plan view of a single piece container blank formed in accordance with an aspect of the present invention;

[0004] FIG. 2 is a perspective view of a partially assembled container assembly according to an aspect of the present invention;

[0005] FIG. 3 is another perspective view of a partially assembled container assembly according to an aspect of the present invention;

[0006] FIG. 5 is another perspective view of a partially assembled container assembly according to an aspect of the present invention;

[0007] FIG. 6 is yet another perspective view of a partially assembled container assembly according to an aspect of the present invention;

[0008] FIG. 7 is still another perspective view of a partially assembled container assembly according to an aspect of the present invention; and,

[0009] FIG. 8 is a perspective view of the assembled container according to an aspect of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0010] The present invention provides a blank and resulting container for holding any variety of goods. By way of overview and with references to FIGS. 1-8, an embodiment of the present invention includes a single piece blank 20 of foldable material arranged to form a container 60. Specific details of the blank 20 and container 60 are described with more particularity below.

[0011] FIG. 1 depicts the blank 20 used to form the container 60. The blank 20 is preferably constructed from a single piece of formable material such as, without limitation, sheets of cellulose based materials formed from cellulose materials such as wood pulp, straw, cotton, bagasse and the like. Cellulose based materials useful in the present invention come in many forms such as fibreboard, containerboard, corrugated containerboard and paperboard. The blank 20 is cut, scored, perforated or otherwise formed to include a plurality of panels that when assembled form container 60. In all FIGURES, like numbers indicate like parts. Additionally, cut lines are shown as solid lines, scored lines as dashed lines, and lines of perforations as broken lines.

[0012] With respect to FIG. 1, the blank includes a bottom panel 22, opposed side panels 24 and opposed end panels 26. The bottom panel is generally rectangular in shape and is connected with the side panels along a fold line 23. The bottom panel is connected with the end panels 26 along a fold line 25. The bottom panel 22 also includes a plurality of slots 40 disposed along the fold line 23.

[0013] The side panel 24 is generally U-shaped. The side panel 24 is connected to a side panel locking flap 36 along a fold line 29 opposite fold line 23. An embodiment, the fold line 29 includes two spaced-apart fold lines, the spacing being known to those skilled in the art as necessary to permit the locking nature of the flap when the container 60 is formed. The side panel 24 also includes a top panel 34 which is connected to the side panel along fold line 37. The top panel 34 is substantially triangular in shape and is connected with an inner end panel 32 along a fold line 35. The inner end panel 32 is substantially rectangular in shape and is connected to an inner side panel 30 along a fold line 33. Fold lines 33 and 35 are substantially perpendicular to one another. Additionally, fold lines 33 and 37 are substantially parallel to one another. An inner side panel is connected with the inner end panel 32. The inner side panel 30 appears to be of a generally L-shaped nature and includes a cut-out portion defined along cut lines 43, 31 and 39.

[0014] End panel 26, which is connected with bottom panel 22 along a fold line 25, is substantially U-shaped as well. The U-shape defines a cut-out region 44 as defined by cut line 45. The end panel 26 is connected with an end panel flap 28, which is connected with the end panel along a fold line 27. As shown in FIG. 1, fold lines 27 and 25 are substantially perpendicular to one another. End panel flap 28 is separate from side panel 24 by a cut line 39. Additionally, end panel flap 28 is separate from inner side panel 30 by a cut line 31. As such end panel flap 28 is connected only with the end panel 26. The inner side panel 30, inner end panel 32 and top panel 34 all define a corner post assembly 50 that, when the blank 20 is folded into the container 60, the corner post assembly 50 provides additional stacking support and rigidity to the container.

[0015] In order to further illustrate the various aspects of the embodiments, FIGS. 2 through 8 show the blank 20 being erected into the container 60.

[0016] With specific reference to FIGS. 2 and 3, the assembly of the container 60 is initiated by folding the end panels and the end panel flap upwardly approximately 90 degrees along fold line 25. The end panel flap 28 may then be folded inwardly approximately 90 degrees along fold line 27.

[0017] As can best be seen in FIGS. 4 and 5, the next step in the box erection process is to fold side panels 24 inwardly approximately 90 degrees such that the side panel 24 is juxtaposed to end panel flap 28. As can be seen in FIG. 4, this will result in the corner post assembly 50 hanging substantially free, and is only connected to the side panel 24 along fold line 37. The corner post assembly 50 may then be folded inwardly as best depicted in FIGS. 5 and 6. Corner post assembly 50 is folded inwardly by bringing the corner post assembly to the inside of the corner created by the end panel 26 and end panel flap 28. Specifically, the inner side panel 30 and the inner end panel 32 are rotated inwardly such that the inner end panel 32 is juxtaposed an inner surface of the end panel 26, and the inner side panel 30 is juxtaposed an inner surface of end panel flap 28 and an inner
surface of side panel 24. The cut-out resulting from cut lines 43, 39 and 31 discussed above creates a profile on the inner side panel 30 such that when the corner post assembly 50 is folded inwardly as disclosed herein, the profile of that cut-out substantially matches the U-shaped cut-out of side panel 24, as best seen in FIG. 7.

[0018] With specific reference to FIG. 7, the locking of the various panels to form the container 60 is illustrated. Specifically, when the various corner post assemblies 50 are folded inwardly to bring the various panels into the relationship shown in FIG. 7, the inner side panels 30 are locked into place by inserting the inner side panel locking tab 42 into the respective portions of slots 40 in the bottom panel. This substantially locks the side panels 24 and end panels 26 together. It should be noted that as a result of folding the post assembly 50 inwardly, the end panel flap 28 is sandwiched between the inner side panel 30 and side panel 24. Even at this stage of erection, the container 60 is quite stable and structurally sound. To complete the locking arrangement, the side panel locking flap 36 is folded inwardly over the side panel 24 and a portion of the inner side panel 30. The side panel locking flap 36 is folded approximately 180 degrees over these various panels such that the side panel locking flap tabs 38 may be inserted into respective slots 40 in the bottom panel.

[0019] FIG. 8 depicts the container 60 that results from the assembly of blank 20. As can be seen in this FIGURE, the container 60 includes cut-out portions on all the side and end panels that allow viewing or access to any products stored in between. Additionally, the container 60 includes reinforced, multi-post corner panels, in each of its four corners that provide significant structural strength for this container 60. Additionally, the top panels 34 add to the rigidity of the container by helping to control the relative motions of the side panels 24 and end panels 26. Also top panel 34 provides a stacking or a bearing surface for successive containers to be stacked vertically on top of one another (not shown). The container 60 as shown is simple to manufacture and easy to assemble and may be a design of considerable usage in our club stores or bulk stores where products are sold in large quantities on the open floor. However, this design is also useful in any variety of retail/wholesale environments.

[0020] While various embodiments of the invention have been illustrated and described, as noted above, many changes can be made without departing from the spirit and scope of the invention. Accordingly, the scope of the invention is not limited by the disclosure of the various embodiments. Instead, the invention should be determined entirely by reference to the claims that follow.

What is claimed is:
1. A single sheet of foldable material cut and scored to define a container blank, comprising:
   a bottom panel
   a side panel connected with the bottom panel;
   an end panel connected with the bottom panel;
   a top panel connected with said side panel opposite said bottom panel;
   an inner end panel connected with said top panel adjacent said side
   an inner side panel connected with said inner end panel;
   wherein said inner side panel is adjacent but not connected to said side panel.
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