

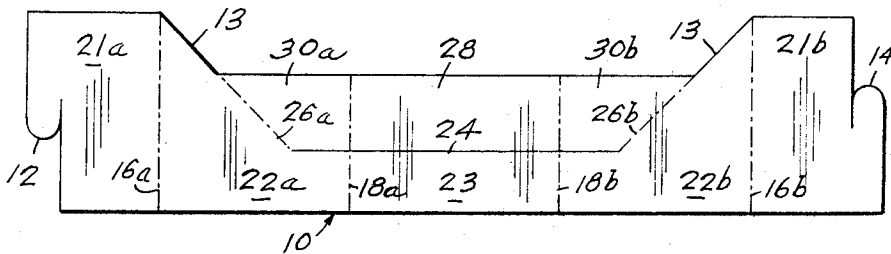
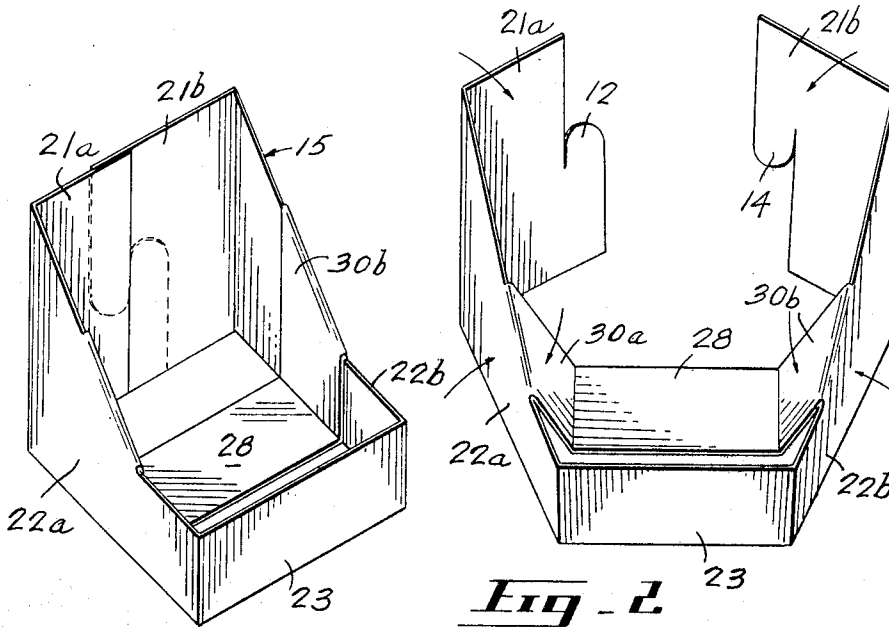
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STRIP BOTTOM TRAY

3,285,399

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

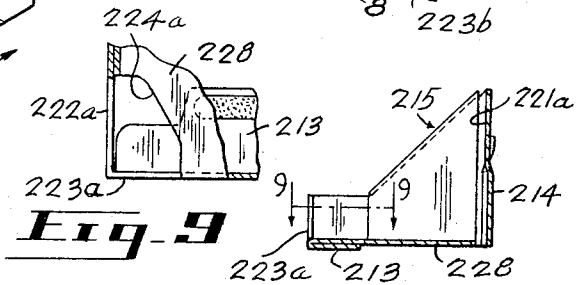
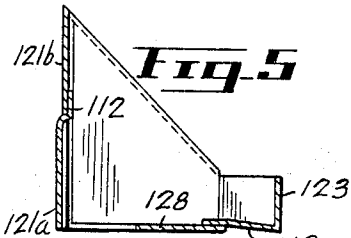
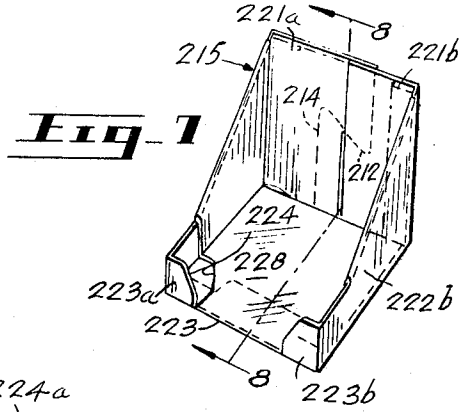
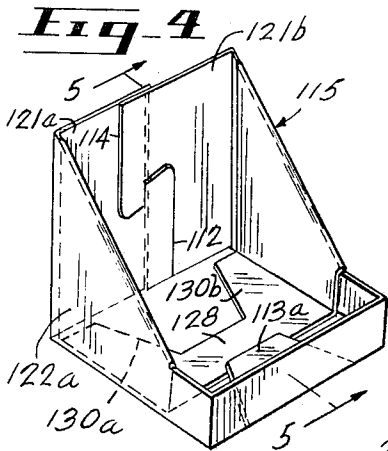
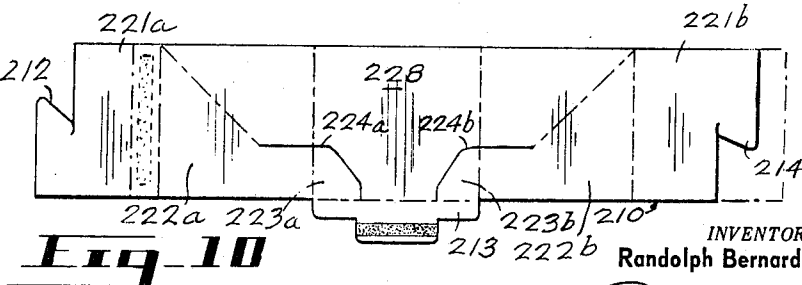
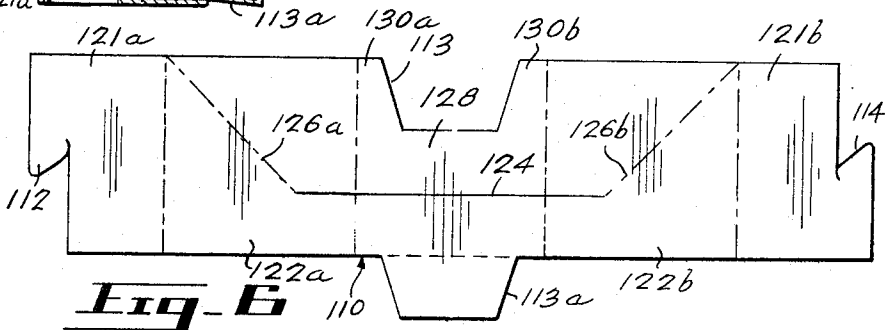


Fig. 8



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**STRIP BOTTOM TRAY**

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6 Claims. (Cl. 206-44)

The present invention relates to the manufacture of collapsible display stands or trays made from flexible paper-board or the like and more specifically to a collapsible display tray of this type made from a one-piece blank and which can be easily and quickly assembled.

In accordance with the invention, the basic blank utilized to make up the present collapsible display trays consists essentially of a one-piece blank of flexible cardboard or paperboard of substantially overall elongated rectangular outline scored or creased for folding transversely of its length so that it can be folded up into an upright rectangular tray having interconnected front and side walls and a back wall having two interconnectable portions consisting of outer end portions of the blank shaped to provide interlocking tabs. A central portion of the blank bears a longitudinal cut and diagonal fold lines meeting the ends of this cut so that the upper section of this blank central portion is adapted to be folded inwardly of the above described rectangular tray formation to provide at least a partial bottom panel or wall for the erected tray. This basic blank formation can be readily varied slightly to provide alternative tray constructions having the same general upright surrounding walls but with varying bottom panels giving a greater supporting surface. The resultant display trays thus produced are particularly suited for the support and display of a plurality of articles packed in flat rectangular packages, for example, cigars, cigarettes, or the like.

Having thus generally described the nature of the invention, particular reference will be made to the accompanying drawings, showing by way of example preferred embodiments thereof, and in which:

FIGURE 1 is a view in perspective elevation of a preferred form of a collapsible display tray in accordance with the invention.

FIGURE 2 is a perspective view showing the tray construction of FIGURE 1 as it would appear when partially folded showing the direction of fold of the various portions.

FIGURE 3 is a plan view of a blank from which the tray construction of FIGURE 1 is made.

FIGURE 4 is a view in perspective elevation corresponding to FIGURE 1 and showing an alternative construction embodying an extended bottom panel partially formed by a fold-in-tab from the front panel.

FIGURE 5 is a cross-sectional view of the construction of FIGURE 4 along the line 5-5 to show the assembly more clearly.

FIGURE 6 is a view in plan of a blank from which the tray construction of FIGURE 4 is made.

FIGURE 7 is a view in perspective elevation of a further alternative tray construction embodying a substantially complete bottom panel, a recessed front panel and an adhesively secured bottom tab.

FIGURE 8 is a cross-sectional view of FIGURE 7 along the line 8-8.

FIGURE 9 is an enlarged detail view of a portion of the construction shown in FIGURE 8 as seen along the line 9-9.

FIGURE 10 is a view in plan of a blank shown in full lines from which the tray construction of FIGURE 7 is made: this and the blanks shown in FIGURES 3 and 6 would be modified as shown in broken lines when the back wall portions are to be interconnected adhesively.

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Referring to the construction shown in FIGURES 1 and 2, the blank from which this tray 15 is made is shown in FIGURE 3 and consists of a one-piece blank 10 of flexible paper-board which is shaped to have an overall rectangular outline with an elongated central cut-out 13 and having at each end opposed locking tabs 12, 14. The blank 10 is scored for folding transversely of its length as indicated at 16a, 16b, 18a and 18b to define back wall portions 21a, 21b, side walls 22a, 22b and a front wall 23. A longitudinally extending cut 24 is provided with the ends of the cut 24 terminating at the ends of two diagonally placed scored fold lines 26a, 26b to define an inwardly folding bottom panel 28 supported by side panels 30a, 30b extending from the upper edges of the side walls 22a, 22b. As shown most clearly in FIGURE 2 to assemble the tray construction 15, the bottom wall panel 28 is pushed inwardly as the side walls 22a, 22b are folded inwardly and finally the back wall portions 21a, 21b are interconnected by interlocking the tabs 12, 14. Alternatively the back wall portions 21a, 21b can be modified as shown in FIGURE 10 and adhesively secured. The resultant rectangular shaped tray is then ready to receive several rectangular shaped packages, for example, cigars or cigarettes for display purposes. As will be obvious, since there is no subsequent gluing or preassembly necessary, any desired printing or advertising matter can readily be applied to the upper surface of the blank in the location desired for the assembled tray.

The construction 115 shown in FIGURES 4 and 5 is quite similar to that previously described with the difference, as shown in the blank shown in FIGURE 6, that the central portion of the one-piece blank 110 includes a cut-out 113 on the upper edge and a corresponding outstanding tab 113a on the lower edge which is advantageous in saving board in the initial blanking out.

The cut-out 113 is of a reduced width relative to the cut-out 13 in the construction of FIGURE 1 and the diagonal fold lines 126a, 126b permitting the folding of the bottom panel 128 as before, but in this case, the bottom panel has extensions 130a, 130b, providing additional supporting surfaces. When the bottom panel 128 is folded inwardly and the side walls 122a, 122b also folded inwardly the tab 113a is folded under the front wall 123 and sprung over the bottom panel 128 as shown in FIGURE 5. The back wall portions 121a, 121b are then interconnected with the locking tabs 112, 114 to complete the assembly.

The further alternative construction 215 shown in FIGURE 7 is again similar with the difference, as shown in the blank 210 of FIGURE 10, that the central cuts 224a, 224b are separated and that there is no central cut-out similar to 13 and 113 in the previously described constructions. There is also a change in the shape of the outstanding tab 213. With this arrangement the bottom panel 228 is not separated at its front edge from the front wall 223 which now consists of two end portions 223a, 223b with the centre portion open. This makes the bottom panel 228 substantially complete across the bottom of the tray as shown most clearly in FIGURE 7.

When this blank is folded up by pushing the bottom panel 228 inwardly, folding the side walls 222a, 222b inwardly, and finally folding the back wall portions inwardly and connecting them by the interlocking tabs 212, 214, the tab 213 is folded under along the fold line 226 and is adhesively secured to the lower face of the bottom panel 228 to reinforce the relatively weak front wall 223.

As will be obvious by reference to the preceding description and accompanying drawings, the collapsible tray constructions of FIGURES 1, 4 and/or 7 can be readily made in any desired dimensions to suit the support and display of many sizes of packaged products. The relatively simple blanks as shown in FIGURES 3, 6 and 10

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lend themselves readily to any desired proportional change while maintaining the same basic outlines.

As indicated by broken lines 11, 111 and 211 in the blanks shown in FIGURES 3, 6 and 10, the interlocking end flaps 14, 114 and 214 can be eliminated and replaced by full panels having overlapping marginal portions which are adhesively secured to each other as an alternative means of completing the assemblies.

I claim:

1. A one-piece blank of flexible material adapted for erection into a collapsible display tray with upstanding interconnected back, side and front walls defining a rectangular enclosure and at least a partial bottom wall panel extending between said side walls, said blank having an overall substantially elongated rectangular outline and having a longitudinal margin which is straight for at least most of its length and defines the bottom of the enclosure and spaced therefrom by the height of the side and back walls, a second longitudinal margin defining the upper extremity of the said side and back walls, the blank being creased and scored transversely of and at spaced intervals along its length to define said front, back and side walls with terminal portions of said blank defining said back wall being shaped to provide opposed interconnecting tabs, a central portion of said blank bearing at least one longitudinally extending cut running parallel to said lower margin and defining the upper extremity of the front wall of the tray and spaced diagonal fold lines extending from the upper margin of said blank to meet the terminal ends of said cut, said cut extending beyond the fold lines defining the side edges of the front wall on each side by a distance equal to the distance between the cut and the said lower margin, whereby when the blank is erected, the portion between the cut and the upper margin is adapted to be bent downwards at the diagonal fold lines and across at the transverse fold lines to form a bottom panel for the enclosure, the diagonal fold lines forming a side wall top edge portion which slopes from a high back wall towards a low front wall having the upper front corner of the enclosure open and exposed to view.

2. A one-piece blank as claimed in claim 1 formed with a tab protruding from the front wall region of said lower margin and joined to the rest of the blank by a fold line which follows the remainder of the straight lower margin region and wherein there are two said cuts longitudinally aligned and spaced, the inward extremities of said cuts terminating in extension cuts which turn towards the said straight margin to said joining fold line, whereby the erected tray has a central open gate in the front wall.

3. A collapsible display tray construction, folded from paperboard and comprising a rectangular enclosure having a pair of opposed centrally interconnected back wall portions constituting a back wall, side walls joined at folds to the back wall portions and a front wall joined at folds to the side walls, the front wall being substantially lower than the back wall so as to leave the upper front corner of the enclosure open and exposed to view, parallel portions on each side wall extending diagonally downwards, the diagonal portions being integrally connected by a panel which is folded flat down and against the inner sides of

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the side walls and across the bottom of the enclosure so as to form a bottom panel, the tray construction being formed from the one piece blank of flexible material, the blank having an overall substantially elongated rectangular outline and having a longitudinal margin which is straight for at least most of its length and spaced therefrom by the height of the side and back walls, a second longitudinal margin defining the upper extremity of the said side and back walls, the blank being creased and scored transversely of and at spaced intervals along its length to define said front, back and side walls with terminal portions of said blank defining said back wall being shaped to provide opposed interconnecting tabs, a central portion of said blank bearing at least one longitudinally extending cut running parallel to the straight region of said lower margin and defining the upper extremity of the front wall of the tray, and spaced diagonal fold lines extending from the upper margin of the blank to meet the terminal ends of said cut, said cut extending beyond the fold lines defining the side edges of the front wall on each side by a distance equal to the distance between the cut and the said lower margin, whereby when the blank is erected, the portion between the cut and the upper margin is adapted to be bent downwards at the diagonal fold lines and across at the transverse fold lines to form a bottom panel for the enclosure, the diagonal fold lines forming a side wall top edge portion which slopes from the said high back wall towards the said low front wall.

4. A collapsible tray construction as claimed in claim 3 wherein the blank is cut to continue the diagonal fold lines in a straight line to the level of the back wall portions, so that the major part of each side wall slopes diagonally downwards.

5. A collapsible tray construction as claimed in claim 3 wherein the diagonal fold lines extend from the top of the back wall portions diagonally to the extremities of said cut, whereby the diagonal fold lines form the major part of the upper edge of the side walls of the enclosure.

6. A collapsible tray construction as claimed in claim 3 wherein the lower margin of the blank is formed with a tab protruding from the said front wall region and joined to the rest of the blank by a fold line which follows the remainder of the straight lower margin region and wherein there are two said cuts longitudinally aligned and spaced, the inward extremities of said cuts terminating in extension cuts which turn towards the said lower margin to said joining fold line, whereby the erected tray has an open gate in the front wall, the protruding tab being bent back underneath the enclosure.

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