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3,089,632

DUMP BIN

Filed Oct. 31, 1961

FIG. 1.

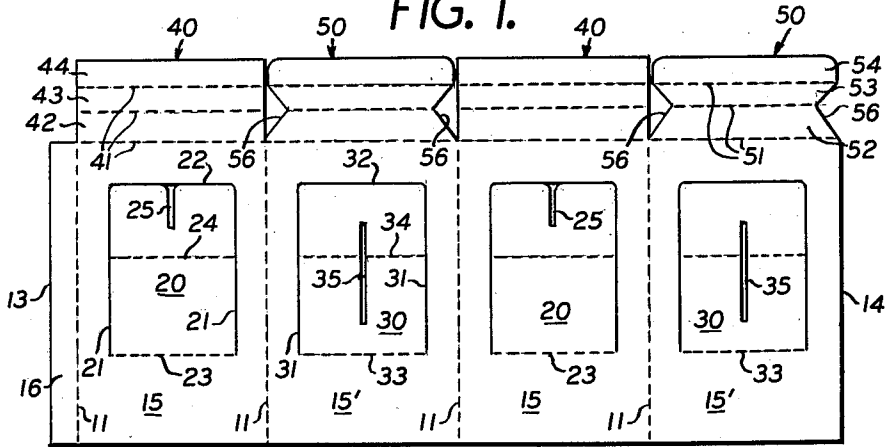


FIG. 2.

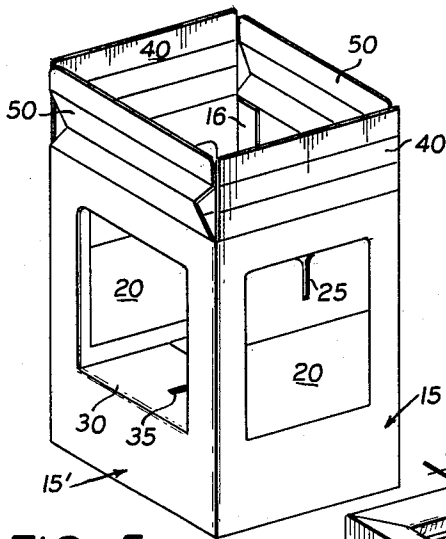


FIG. 3.

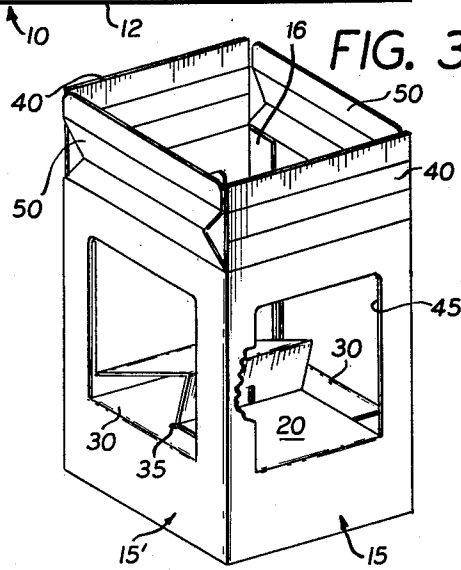


FIG. 5.

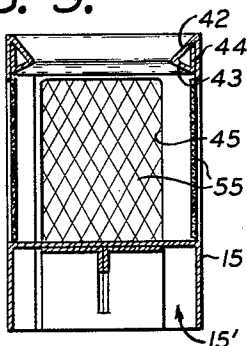
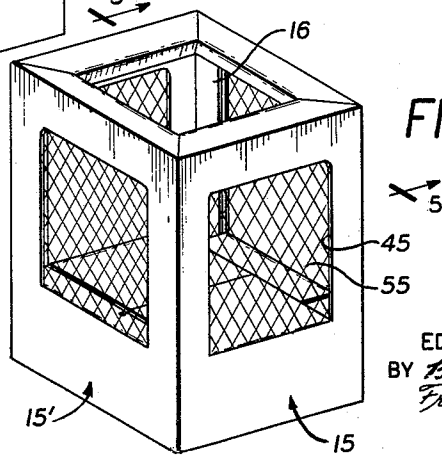


FIG. 4.



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3,089,632
DUMP BIN

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This invention relates to dump or display bins, such as used in markets and the like for display of "specials," and more particularly to an improved and less expensive construction of such dump bin.

The term "dump bin" refers to devices used to contain and preferably display items which are "on special" in supermarkets and the like. Such devices may take, for example, the form of wire baskets, open top barrels, partially open cartons and the like. One of the better known forms has a raised platform having raised sides extending around three sides thereof so as to provide a place in which the special items may be placed with access thereto being provided from the open side of the dump bin. Such dump bins as hitherto provided and used have either been unattractive in appearance, difficult of access for removing items therefrom, or relatively expensive in construction.

In accordance with the present invention, a novel display type dump bin is provided which is formed from a single sheet of heavy paper board, such as corrugated board, slotted and provided with fold lines in a pre-set manner whereby, when the panels formed by the fold lines are folded and interlocked in a certain predetermined relation, a novel dump bin is provided having a strongly supported elevated platform, four side walls provided with relatively wide windows or openings therein, and a reinforced top edge construction. The relatively wide openings in the side walls may be closed by suitable means, such as chicken wire or the like, through which the items on display may be readily viewed.

The openings in the side walls or panels of the dump bin are formed by cutout portions or flaps which are bendable inwardly about fold lines, and interlockable with each other, to form a platform which is disposed at about one-quarter to one-third the overall height of the dump bin. There are four of these flaps which, when interlocked, provide not only a stably supported platform but also adequate reinforcement for the entire dump bin. Interlocking flaps are provided on the upper edges of the side panels in such a manner that triangular ribs are formed along these upper edges by folding of the flaps in an interlocking relationship.

For an understanding of the principles of the invention, reference is made to the following description of a typical embodiment thereof as illustrated in the accompanying drawing. In the drawing:

FIG. 1 is a plan view of the blank from which the dump bin is formed;

FIG. 2 is a perspective view illustrating the dump bin with its support platform partly erected;

FIG. 3 is a view similar to FIG. 2 illustrating the last step in erection of the support platform;

FIG. 4 is a perspective view of the completed dump bin; and

FIG. 5 is a sectional view thereof taken on the line 5—5 of FIG. 4.

Referring first to FIG. 1, the dump bin is constructed from a substantially flat sheet 10 of suitable cardboard, paperboard, or double face corrugated board, divided transversely by fold lines 11 into four panels 15, 15', 15'', and 15'''. One of the fold lines 11 also defines the inner edge of a gluing flap or the like 16, which, when the sheet 10 is folded, is cemented to the outer panel 15' to maintain

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the bin in assembled form, as best seen in FIGS. 2, 3 and 4. The panels 15 and 15' are identical with each other, and the panels 15'' and 15''' are identical with each other.

Each panel 15 is provided with a foldable interior flap 20 defined by vertical cut lines 21 and a horizontal cut line 22, the panels or flaps 20 being foldable inwardly from the associated panel 15 about a fold or bend line 23. In addition, each flap 20 has an intermediate fold line 24, for a purpose to be described. The distance between fold lines 23 and 24 is equal to substantially one-half the width of the four equal width panels, and the distance between the fold line 23 and the bottom edge 12 of sheet 10 is equal to the distance between the fold line 24 and the cut 22 defining the free end of the flap 20. Each flap 20 has a substantially rectangular notch 25 extending inwardly from its free edge (at cut 22), the notches 25 being disposed centrally of the flaps 20 and extending perpendicular to the fold lines 23 and 24 but terminating a set distance from the fold lines 24. The notches 25, for a purpose to be described, have rounded entry corners.

In a similar manner, each of the two flaps 15' is provided with a central flap 30 defined by vertical cut lines 31, a horizontal cut line 32, and a fold line 33. Each flap 30 has an intermediate fold line 34. Fold lines 34 are substantially horizontally aligned with the fold lines 24 of flaps 20. Each of the two flaps 30 is formed with a vertically extending slot 35, disposed substantially centrally thereof, and extending to either side of the fold line 34. The extent of each slot 35 outwardly of the fold line 34 is substantially equal to the length of each slot 25, and the extent of each slot 25' inwardly of the fold line 24' is substantially equal to the distance between each edge of a slot 25 and a cut line 21.

Each panel 15 includes an end flap 40 divided by fold lines 41 into inner, intermediate and outer sections, 42, 43 and 44, respectively. Similarly, each panel 15' is formed with an end flap 50 divided by fold lines 51 into an inner section 52, an intermediate section 53, and an outer section 54. The outer corners of the end flaps 50 are rounded, and the side edges thereof are formed with V notches 56 providing bevelled edges for the inner sections 52 and the intermediate sections 53.

To erect the dump bin, the sheet 10 is folded about the fold lines 11 to form an upright body substantially rectangular in cross section, and the side flap 16 is cemented to the right edge 14 of the sheet, thereby maintaining the closed configuration of the sheet. With the bin erect, as shown in FIGS. 2, 3 and 4, the flaps 30 are folded about the fold lines 34 and then folded inwardly about the fold lines 33 so that the free ends of these two flaps extend substantially perpendicular to and are in facing engagement. This aligns the respective slots 35 with each other. The flaps 20 are then folded about the fold lines 24, and then inwardly about the fold lines 23, so that the outer ends of these flaps may be inserted into the aligned slots 35 in facing relation and with the notches 25 extending over and interlocking the facing outer ends of the flaps 30. The thus interlocked relation of the flaps 20 and 30 rigidifies the bin and maintains the latter upright end of rectangular cross section. The interlocked relation of the parts is best seen in FIG. 5.

After this partial erection of the bin, the end flaps 40 are folded about the fold lines 41 to a substantially triangular shape in which the outer sections 44 overlap the inner surfaces of the main body of the panels 15, and the inner section 42 and intermediate section 43 of each flap 40 form, with the outer section 44, the triangular cross section rib along the top edges of the panels. The flaps 50 are then similarly folded and forced downwardly over the folded flaps 40 so that the triangular configuration of the folded flaps 40 fits into the V notches 56 of the folded

flaps 50. This locks the flaps 40 in their triangular relation and at the same time the locked flaps 40 maintain the flaps 50 with a triangular cross section due to the flaps 40 interlocking with the V notches 56. There is thus a triangular reinforcing rib extending around the entire top of the bin, one rib being formed on each of the panels 20 and 30.

The thus erected dump bin may be used as is. However, the windows 45 formed by the folding of the flaps 20 and 30 are preferably "closed" by sheets of chicken wire as indicated at 55, such chicken wire being stapled or otherwise secured to the inner surfaces of the panels 15 and 15'. This allows articles to be stored to a substantial height upon the platform formed by the folded flaps 20 and 30, while easy access to the interior of the dump bin may be had from the top thereof.

It will be apparent that a foldable knock down dump bin has been provided which is attractive in appearance, easily erected, and adapted for ready access. The dump bin, after the side flap 16 has been glued to the end panel 15' along the edge 14, may be shifted in the folded condition and later erected in any desired location, with the screens 55 being readily secured over the windows 45 in any easy manner, as by staples, or by merely hooking into the material of the panels 15, 15'.

While a specific embodiment of the invention has been described in detail in order to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A collapsible dump bin comprising a substantially rectangular sheet of paperboard, corrugated board, cardboard or the like, divided by transverse equi-spaced and substantially parallel first fold lines into four panels arranged, when the sheet is folded and its transverse edges united, to form the four sides of the dump bin; each of said panels having a substantially rectangular central flap therein defined by three cut lines and a second fold line in the respective panel, said second fold lines being substantially longitudinally aligned in the sheet; each central flap having a third fold line intermediate its ends parallel to the associated second fold line and dividing the flap into inner and outer sections; said second and third fold lines having a spacing substantially equal to one-half the width of the panel adjacent the one in which they are located, and the distance between each third fold line and the free edge of the associated flap being substantially equal to the distance between said second fold lines and the adjacent longer edge of said sheet; whereby the central flaps of opposed panels, when the dump bin is erected, may be folded inwardly about the second and third fold lines to juxtapose their outer sections to support their inner sections in substantially horizontal coplanar relation to form a raised floor for the dump bin; the central flaps of one pair of opposed panels having formations interlocking with formations on the central flaps of the other pair of opposed panels, when the flaps are so folded, to complete such floor.

2. A collapsible dump bin as claimed in claim 1, in which said interlocking formations comprise central slots formed in the central flaps of one pair of opposed panels, and central notches formed in the outer sections of the central flaps of the other pair of opposed panels, whereby said one pair of opposed panels may have its central flaps folded downwardly and their outer sections so juxtaposed to provide a slot extending centrally of the raised floor, and the central flaps of the other pair of opposed panels may then be folded with their outer sections inserted into the slot in the floor and with the notches embracing the juxtaposed outer sections of the central flaps of the first mentioned pair of opposed panels.

3. A collapsible dump bin as claimed in claim 2, in which each of said slots has a length in the inner section of the associated panel equal to substantially one-half the width of a central flap of an adjacent panel, the slot extending across the third fold line of the associated panels into the outer section thereof but terminating short of the free edge of the associated flap.

4. A collapsible dump bin as claimed in claim 3, in which each of said notches has its inner end spaced from the third fold line of the associated panel by an amount equal to the length of the slot in the central flap of an adjacent panel disposed in the outer section thereof.

5. A collapsible dump bin as claimed in claim 1, in which each panel has an end flap extending from the upper end thereof, considered in the erected condition of the dump bin; fourth and fifth fold lines dividing each end flap into three substantially rectangular and substantially congruent sections; said end flaps being foldable about said fourth and fifth fold lines, and about a sixth fold line joining each end flap to the associated panel, to form triangular ribs reinforcing the upper ends of the walls of the dump bin.

6. A collapsible dump bin as claimed in claim 5, in which the end flaps of a pair of alternate panels are formed with triangular notches in their side edges, the apices of the notches being on the fourth fold line which is adjacent the sixth fold line; whereby, when the end flaps of the other two panels are folded inwardly to form the triangular ribs, the end flaps of said alternate panels may be folded inwardly to form triangular ribs with said notches interlocking with the ribs on the other two panels intermediate said alternate panels.

7. A collapsible dump bin as claimed in claim 6, in which the outer corners of the end flaps on said alternate pair of panels are rounded to facilitate the interlocking thereof with the triangular ribs on the intermediate pair of panels.

8. A collapsible dump bin as claimed in claim 1, including wire mesh screening across each of said windows.

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