June 7, 1960 A. MITTLEMAN 2,939,621

CONTAINER

Filed Jan. 27, 1959

FIG. 1

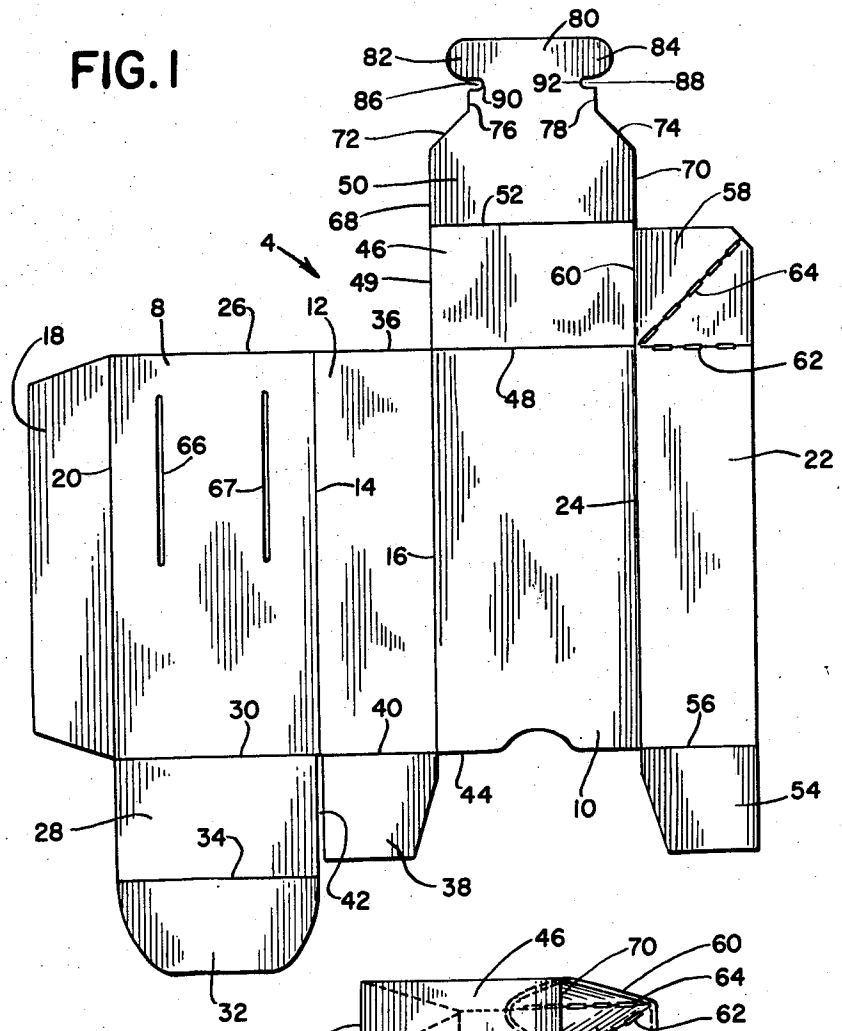
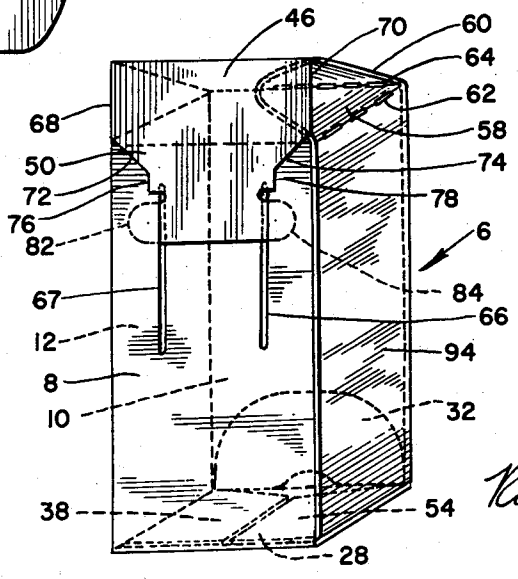


FIG. 2



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CONTAINER

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4 Claims. (Cl. 229—17)

This invention relates to containers and more particularly to boxes and still more particularly to one-piece boxes.

Many items, expecially small ones such as washers, nuts, electrical splice caps and terminal lugs, etc., are packaged many in one box. The user then opens the box and dispenses the items, and ideally when this is done only as many items as are immediately needed are removed from the box. With boxes which are commonly used, it is common that a great many more pieces fall out of the box than desired, resulting in loss of parts and general aggravation.

The present invention overcomes the difficulties refered to above in a simple and inexpensive way, and important objects of the invention are to provide a box possessing the above advantages.

A box embodying the invention comprises a body portion including a front panel, a back panel and first and second side panels, the aforementioned panels providing an open end for the body portion, a top panel integral with the back panel, a flap depending from the top panel and overlapping and in interengagement with the front panel, and a bellows-like web joining adjacent edges of the second side panel and the top panel.

The above and other objects and advantages will appear from the following description of a preferred example of the invention and the accompanying drawings thereof in which:

Fig. 1 is a developed view of a blank from which a box embodying the invention can be made; and

Fig. 2 is a perspective view of a box made from the blank of Fig. 1.

Fig. 1 shows a one-piece blank 4 of cardboard or the like from which a box 6 (Fig. 2) embodying the invention can be made, blank 4 being illustrated as seen from the side thereof destined to become the inside of box 6.

Blank 4 has a rectangular front panel 8 and a generally similar back panel 10. A rectangular side panel 12 is between and integrally joins panels 8 and 10 on parallel fold lines 14 and 16 respectively. A generally trapezoidal panel 18 integrally joins that edge of panel 8 remote from panel 12 on a fold line 20, and a rectangular panel 22 similar to panel 12 integrally joins that edge of panel 10 remote from panel 12 on fold line 24. Fold lines 14, 16, 20 and 24 are parallel to each other.

Panel 8 has an edge 26 perpendicular to and extending from fold line 14 to fold line 20. A rectangular bottom panel 28 integrally joins that edge of panel 8 remote from edge 26 on a fold line 30 perpendicular to and extending from fold line 14 to fold line 20. A generally trapezoidal flap 32 integrally joins the edge of panel 28 remote from panel 8 on a fold line 34 parallel to fold line 30.

Panel 12 has an edge 36 which is a continuation of edge 26, edge 36 being perpendicular to and extending from fold line 14 to fold line 16. A flap 38 integrally joins that edge of panel 12 remote from edge 36 on a fold line 40 perpendicular to and extending from fold line

14 to fold line 16. Between panel 28 and flap 38 is a slit 42.

Panel 10 has an edge 44 perpendicular to and joining fold lines 16 and 24 and which is a continuation of fold line 40.

A rectangular top panel 46 similar to panel 28 is integrally joined to the edge of panel 10 remote from edge 44 on a fold line 48 perpendicular to and joining fold lines 16 and 24 and which is a continuation of edge 36. Panel 46 has an edge 49 which is a continuation of fold line 16.

A flap 50 is integrally joined to the edge of panel 46 remote from fold line 48 on a fold line 52 parallel to fold line 48. Flap 50 will be described later in more detail.

A modified rectangular flap 54 is integrally joined to panel 22 on a fold line 56 which is a continuation of edge 44.

A modified square web 58 integrally joins that edge of panel 46 remote from edge 49 on a fold line 60 parallel to edge 49 and that edge of panel 22 remote from fold line 56 on a fold line 62 parallel to fold line 56. Fold line 60 is a continuation of fold line 24 and fold line 62 is a continuation of fold line 48. Web 58 is composed of two 45-degree right triangles integrally joined opposite the right angles thereof on a fold line 64 which intersects fold lines 60 and 62 at the point where the latter intersect each other. Fold lines 62 and 64 may be and as shown are perforated.

Panel 8 has a pair of spaced slits 66 and 67 therethrough which are parallel to each other and to fold lines 14 and 20.

To revert to flap 50, this part includes a pair of parallel opposite edges 68 and 70 which are of the same length and which are continuations of edge 49 and fold line 60. Starting at the ends of edges 68 and 70 remote from panel 46 flap 50 has a pair of converging edges 72 and 74 which merge, respectively, with edges 68 and 70. Starting at the ends of edges 72 and 74 remote from panel 46 flap 50 has a pair of edges 76 and 78 which merge respectively, with edges 72 and 74. Edges 76 and 78 are parallel to each other and to edges 68 and 70 and are spaced apart a distance greater than that separating slits 66 and 67.

Flap 50 further has an end portion 80 remote from panel 46, and having a pair of similar oppositely-facing tabs 82 and 84. Tab 82 is separated from edge 76 by a slot 86 and tab 84 is separated from edge 78 by a slot 88. Slots 86 and 88 have bottoms 90 and 92, respectively, which are separated by a distance slightly less than that between slits 66 and 67.

A manner in which box 6 may be made from blank 4 will now be described. The bending described will all be upward, that is, out of the plane of Fig. 1 unless otherwise noted. Panel 18 is bent at right angles to panel 8 along fold line 20, panel 8 is bent at right angles to panel 12 along fold line 14, panel 12 is bent at right angles to panel 10 along fold line 16 and panel 22 is bent at right angles to panel 10 along fold line 24. Simultaneously with the last-mentioned bending web 58 is bent at right angles to panel 46 along fold line 60. Thus panels 18 and 22 overlap each other. Panels 18 and 22 are secured together as by cementing, with panel 18 on the inside, that is, with panel 18 closer to panel 12 than is panel 22.

Panels 18 and 22 together provide a second side panel 94 for box 6 and front and back panels 8 and 10 and side panels 12 and 94 provide a body portion of box 6 having first and second open ends at the ends thereof to which panels 46 and 28 are respectively joined.

The first open end may be closed by bending flap 50 toward the body portion of box 6 along fold line 52

until it is perpendicular to panel 46, and by simultaneously bending flap 46 toward the body portion of box 6 along fold line 48 until flap 46 is perpendicular to panel 10 and bending web 58 along fold lines 60, 62 and 64 until web 48 is between top panel 46 and the first open end of the body portion of box 6. In this final condition of web 58 it integrally connects adjacent edges of panels 46 and 94 in bellows-like fashion to prevent articles from falling out of box 6 between such adjacent edges.

Flap 50 now overlaps panel 8 and tabs 82 and 84 are inserted through slits 67 and 66, respectively. As shown, but not necessarily, the major portion of flap 50 is located on the outside of the body portion of box 6 and only tabs 82 and 84 are on the inside of such body portion.

Thus, top panel 46 is movable between a closed position in which it covers the first open end of the body portion of box 6 and an open position in which articles can be dispensed from box 6 between the adjacent edges of panels 12 and 46, these last two edges being unconnected to each other.

As top panel 46 is moved between its closed and open positions tabs 82 and 84 slide back and forth in slits 67 and 66 and in the open position tabs 82 and 84 engage the ends of slits 67 and 66 adjacent edge 26 of panel 8. Thus the open position of top panel 46 is defined by the engagement of tabs 82 and 84 and the ends of slits 67 and 66 referred to.

Thus the opening between adjacent edges of panels 12 and 46 is governed as to its maximum size, in accordance with the size of the articles to be contained in box 6 and the number of such articles desired to be dispensed at one time.

The second open end may be closed in the usual way, by bending flaps 38 and 54 toward each other along fold lines 40 and 56 respectively, by bending flap 32 toward the body portion of box 6 along fold line 34 until it is perpendicular to panel 28, by bending panel 28 along fold line 30 until it is perpendicular to panel 8 and covers the first open end and simultaneously tucking flap 32 inside the body portion of box 6.

Normally the first open end of the body portion of box 6 will be closed as aforesaid and box 6 will be filled from the second end prior to closing the second end. Then the user of the contents needs merely to push on flap 50 to move top panel 46 to its open position, dispense articles as aforesaid and move top panel 46 to its closed position.

The invention is well adapted to the attainment of the stated objects and advantages and others.

Many changes in the illustrated details can be made without departing from the invention. Therefore those details are not to be taken as limitations on the invention except as they may be included in the appended claims.

What is claimed is:

1. A box comprising a body portion including a front panel, a back panel and first and second side panels, said panels providing an open end for said body portion, a top panel integral with said back panel and movable between a closed position in which said top panel covers said open end and an open position, a flap integral with and depending from the edge of said top panel remote from said back panel and overlapping and in slidable interengagement with said front panel at all positions of said top panel between and including said open and closed positions, and a bellows-like web integrally connecting adjacent edges of said second side panel and said top panel, adjacent edges of said first side panel and said top panel being unconnected to each other.

2. A box comprising a body portion including a front panel having first and second parallel slits therethrough, each said slit of predetermined length, a back panel and first and second side panels, said panels providing an open end for said body portion, a top panel integral with said back panel and movable between a closed position in which said top panel covers said open end and an open position, a flap integral with said top panel and depending from the edge of said top panel remote from said back panel and overlapping said front panel and having first and second tabs passing through and longitudinally slidable in said first and second slits, respectively, and a bellows-like web integrally connecting adjacent edges of said second side panel and said top panel, adjacent edges of said first side panel and said top panel being unconnected to each other, the portion of said first tab in said first slit having a dimension lengthwise of said first slit substantially less than said length of said first slit and the portion of said second tab in said second slit having a dimension lengthwise of said second slit substantially less than said length of said second slit.

3. A box comprising a body portion including a front panel having first and second parallel slits therethrough, each said slit of predetermined length, a back panel and first and second side panels, said panels providing an open end for said body portion, a top panel integral with said back panel and movable between a closed position in which said top panel covers said open end and an open position, a flap integral with said top panel and depending from the edge of said top panel remote from said back panel and overlapping said front panel and having first and second tabs passing through and longitudinally slidable in said first and second slits, respectively, said tabs being the only parts of said flap inside said box, and a bellows-like web integrally connecting adjacent edges of said second side panel and said top panel, adjacent edges of said first side panel and said top panel being unconnected to each other, the portion of said first tab in said first slit having a dimension lengthwise of said first slit substantially less than said length of said first slit and the portion of said second tab in said second slit having a dimension lengthwise of said second slit substantially less than said length of said second slit.

4. A box comprising a body portion including a front panel having first and second parallel slits therethrough, each said slit of predetermined length, a back panel and first and second side panels, said panels providing an open end for said body portion, a top panel integral with said back panel and movable between a closed position in which said top panel covers said open end and an open position, a flap integral with said top panel and depending from the edge of said top panel remote from said back panel and overlapping said front panel and having first and second tabs passing through and longitudinally slidable in said first and second slits, respectively, said open position limited by engagement of said tabs and ends of said slits, and a bellows-like web integrally connecting adjacent edges of said second side panel and said top panel, adjacent edges of said first side panel and said top panel being unconnected to each other, the portion of said first tab in said first slit having a dimension lengthwise of said first slit substantially less than said length of said first slit and the portion of said second tab in said second slit having a dimension lengthwise of said second slit substantially less than said length of said second slit.

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