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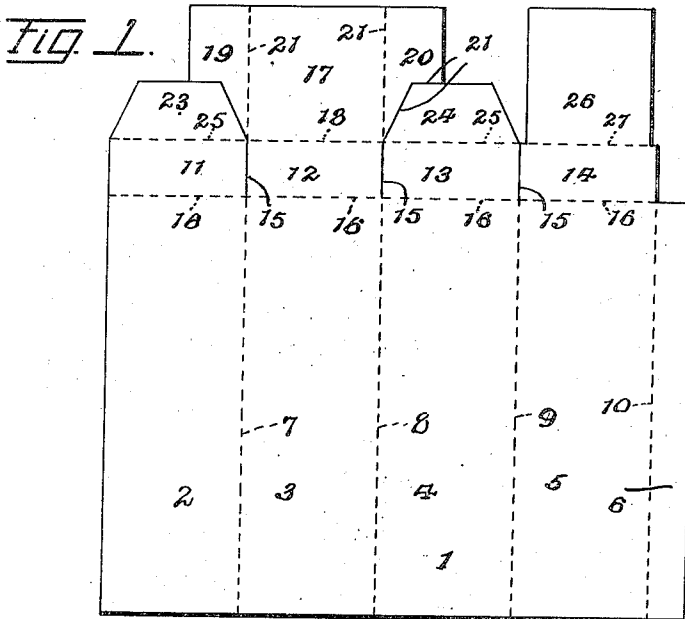
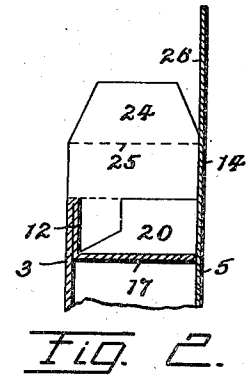
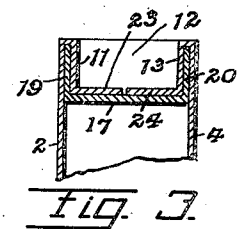
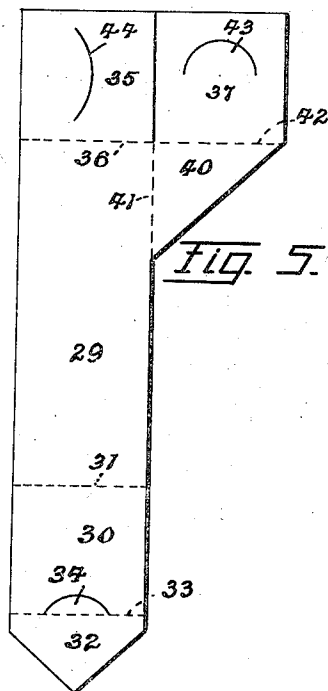
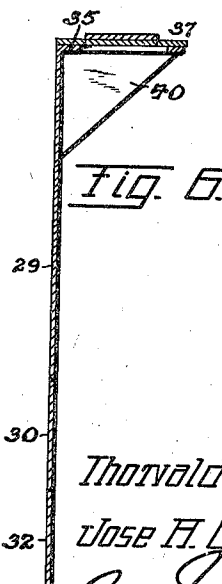
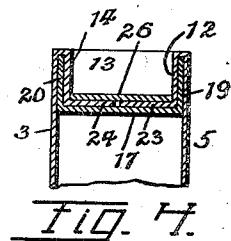
T. S. CULMELL ET AL

2,113,878

PACKAGE CONTAINER

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2 Sheets-Sheet 1



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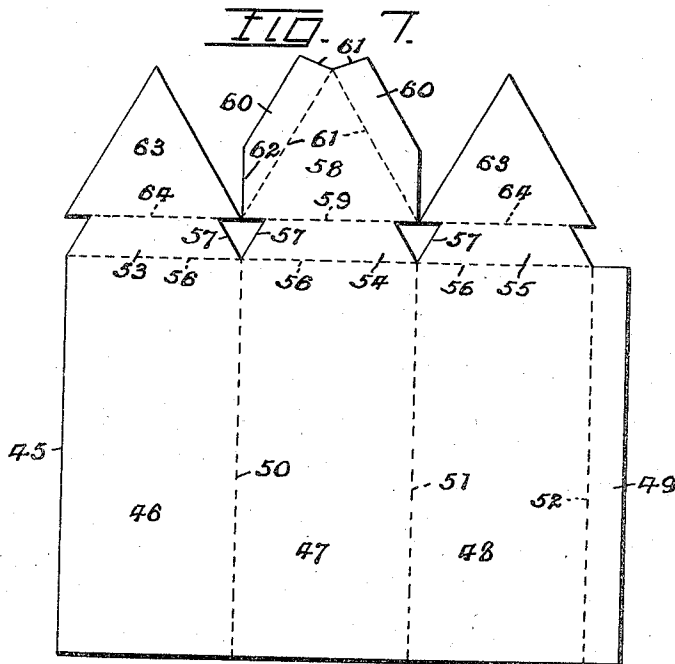
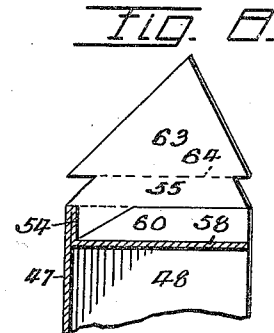
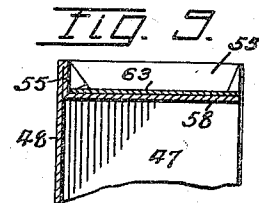
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## UNITED STATES PATENT OFFICE

2,113,878

## PACKAGE CONTAINER

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3 Claims. (Cl. 229—38)

This invention is directed to an improved package container involving a box-like body and an inner receptacle mounted for sliding cooperation with the body and adapted to contain the material to be arranged in the package.

The primary object of the invention is the provision of a box-like body formed of a single blank of appropriate material and foldable along predetermined lines, the blank at one end presenting an uninterrupted edge to provide an open end for the body and at the other end being formed with tab projections particularly constructed in outline and scored for folding on definite lines in order to provide at the closed end of the body a materially reinforced wall which will be completely solid, when the sections are folded, in a manner to prevent any possible leakage from the interior of the body.

A further object of the invention is the provision of an inner receptacle which has a drawer-like cooperation with the body and which is constructed of a single blank which, at one end, provides a double interlocked thickness to prevent the possibility of material supported in this inner receptacle and which is liable to become softened during transportation or storage from soaking into or softening the end of the receptacle with consequent liability of breaking down the end wall of the receptacle and preventing proper withdrawal of the material when the receptacle is withdrawn.

The invention is illustrated in the accompanying drawings in which:

Figure 1 is a view of the blank from which the box-like body is constructed where such box-like body is of rectangular form in cross section.

Figure 2 is a transverse section through the folded blank and illustrating the first fold of the end tabs.

Figure 3 is a section taken at right angles to the section of Figure 2 and showing the second and third folds of the tabs.

Figure 4 is a section along the line of Figure 2 showing the final fold of the last tab of the blank.

Figure 5 is a view of the blank for forming the drawer-like compartment for the inner receptacle.

Figure 6 is a longitudinal section of the same with the blank in folded relation.

Figure 7 is a view of the blank presenting the primary objects of the invention where the box-like body is of triangular form in cross section.

Figure 8 is a transverse section through the

folded body, showing the initial tab fold in position.

Figure 9 is a section taken at an angle to the section of Figure 8 showing the second fold in position.

Figure 10 is a similar view to Figure 9 on a different angularly related section showing the third fold tab in position.

Figure 11 is a view of the blank to make up the inner drawer-like receptacle for the triangular type of box.

Figure 12 is a longitudinal section of the same, with the parts in folded relation to form the inner receptacle.

With particular reference to Figures 1, 2, 3, and 4, which illustrate the box form, 1 indicates the blank which may be formed of cardboard or other appropriate material and which may be made up of sections 2, 3, 4, 5, and 6 marked for folding on scored lines 7, 8, 9, and 10 into a rectangular form body, the section 6 of which is the uniting section, as is conventional.

At the end of each of the sections 2, 3, 4, and 5 there is provided an extension in the form of a wall-reinforcing flap, such flaps being indicated at 11, 12, 13, and 14. These wall reinforcing flaps are of the full width of the sections to which they are connected and of a length somewhat less than half the width of the sections. These wall reinforcing flaps are divided one from the other on the lines of fold 7, 8, 9, and 10, as indicated at 15, and are scored for folding on lines transverse the sections, with such lines of fold indicated at 16.

Each reinforcing flap is provided with folding flaps designed to be interfolded to form the end of the box-like body. The main such folding flap is indicated at 17 and extends beyond the reinforcing flap 12 with an indicated line of fold 18 between them. The folding flap 17 is of the full width of the aligned box section 3 and has a length corresponding to its width, that is a dimension corresponding to the interior dimension of the box. The folding flap 17 has wings 19 and 20, foldable with respect to the main portion on lines of fold 21, which lines of fold are extensions, that is in alignment with the lines of fold 7 and 8.

The wings 9 extend throughout the full length of the folding flap 17, being cut away at 22 and thus divided from identical folding flaps 23 and 24 which are aligned with the sections 2 and 4 of the full width of the reinforcing flaps 11 and 13 to which they are connected by lines of fold 25 and which, beyond the reinforcing flaps, are

convergent in correspondence with the line of fold 21.

A final folding flap 26 having a dimension corresponding to the interior dimensions of the box is arranged in line with the section 5 and connected by a line of fold 27 with the reinforcing flap 14, the folding flap 26 being otherwise free of connection with any of the parts and being slightly reduced in width to accommodate the thickness of the wall reinforcing flaps when folded, as will later appear.

The box shown in Figure 1 is made up as follows: The sections 2, 3, 4, and 5 are folded on the lines 7, 8, and 9 into a rectangular formation, the extension 6 being folded on the line 7 and adhesively secured to the inner surface of the section 2 to secure the sections in box-forming relation. The folding flap 17 is first folded at the end of the box. This fold is illustrated in Figure 2. The fold is made by first folding the reinforcing flap 12 inwardly against the section 3. The flap 17 is disposed transverse the interior of the box and the wings 19 and 20 folded against the flaps 2 and 4. The second folds in completing the end of the box are illustrated in Figure 3. Here the folding flaps 23 and 24 are folded inwardly, the reinforcing flap sections 11 and 13 being folded against the sides of the box and the portions 23 and 24 being folded to rest upon the flap 17. The final fold is indicated in Figure 4, wherein the final folding flap 26 is folded inwardly upon the flaps 23 and 24, the reinforcing flap 14 resting against the reinforcing flap 13. The folded end of the box is then complete and it will be noted that by the various folds, the end of the box is completely sealed against leakage and the actual bottom of the box is arranged inwardly of the end of the box proper and of triplicate thickness.

In Figures 5 and 6 there is shown the interior drawer or carrier for the form of blank shown in Figure 1. This interior carrier or drawer is also made of a single blank 28 comprising a section 29 which has a width equal to the width of the formed box body and a length equal to the distance from the free edge of the box body to the folding flap 17 which forms the front face of the rear wall of the box body. On the forward end the section 29 is provided with an end section 30 commensurate with the interior dimensions of the box and foldable with respect to the section 29 on a marked line 31. The end section 30 is provided with a triangular tab 32 foldable with respect to the end section on a line 33 and the end of the end section 30 is formed with a finger tab 34 folding on the line 33 and otherwise cut out from the end section 30. The opposite end of the section 29 is formed with an end wall 35 corresponding to the end section 30 and foldable with respect to the section 29 on a line of fold 36.

Laterally of the end section 29 is a reinforcing section 37 corresponding in size and shape to the section 35 and a triangular section 40 extends from the end of the free outer edge of the reinforcing section 37 to the adjacent edge of the section 29, the triangular section 40 being foldable with respect to the section 29 on a line of fold 41 which is continued as a line of division between the sections 35 and 37, and the triangular section 40 being foldable with respect to the section 37 on a line of fold 42 forming a continuation of the line of fold 36. The section 37 is cut out to form a securing tab 43 and the section 38 is formed with an incision 44 to receive the tab 43.

In making up the drawer or inner container, the section 35 is first folded upwardly at right angles to the section 29 on the line of fold 36. The sections 37 and 40 are folded upwardly on the line of fold 41 and the section 37 folded at right angles to the triangular section and placed immediately in rear of the section 35, the securing tab 43 being passed through the slot 44. The rear wall is thus reinforced by the section 37 which is prevented from separation by the triangular section 40 and by the securing tab connection. The triangular section 40 forms a partial side for the container, the section 29 being otherwise without side walls. The end section 30 is turned up at right angles to the section 29 on the line of fold 41 and the triangular tab turned inwardly and inserted beneath the top wall of the box when the drawer is pushed in to its limit, the tab 34 forming a finger-piece for convenient withdrawal of the drawer.

The box package form in Figures 1 to 6 is of rectangular form and it is contemplated to construct the same of triangular form in cross section, as may be desirable in some instances, while maintaining the advantages of the rectangular form with respect to the sealing of one end of the box body and its reinforcement at the sealed end. The triangular form of the body of the box is illustrated in Figures 7 to 10, inclusive, while that of the drawer or inner container for such triangular box body is shown in Figures 11 and 12.

Figure 7 illustrates the blank used in making up the triangular form of box body. Such blank, indicated generally at 45, comprises sections 46, 47, and 48 and a securing section 49, the blank being scored or otherwise formed to indicate lines of fold at 50, 51, and 52. Arranged in alignment at one end of each of the main sections 46, 47, and 48 is a wall reinforcing flap 53, 54, and 55 arranged for folding with respect to the main sections on lines of fold 56. These wall reinforcing flaps are, at their juncture with the main sections, of the full width of the sections and their side edges are slightly convergent outwardly, as indicated at 57.

Formed in alignment with the main section 47 and the wall reinforcing flap 54 is a main folding flap 58. This main folding flap 58 has a width corresponding to the width of the main section and is foldable with respect to the wall reinforcing flap 54 on a line of fold 59. The folding flap 58 is triangular in form, corresponding in shape and size to the interior of the box body when formed, and is further provided with wings 60 on opposite edges extending throughout the full length of such edges and foldable with respect thereto on lines of fold 61. The wings extend from the apex of the main folding flap 58 and have at the apex, ends 62 which are at right angles to the lines of fold 61, the opposite ends of the wings being on more acute angles with the lines of fold, as indicated at 62. This formation provides for avoiding conflict with other folds, as will be evident from a description of the assemblage. End folding flaps 63 of triangular form are arranged immediately beyond the wall reinforcing flaps 53 and 55 and foldable with respect thereto on lines of fold 64. The base of the folding flaps 63 are of the full width of the sections with which they are aligned and, of course, have a triangular form corresponding in size and shape to the box body when completed.

The triangular form box body is formed in the same manner as the rectangular box body in that the sections 47, 48, and 49 are folded into tri-

angular outline on the lines of fold 50 and 51. The section 49 is folded on the line 52 and secured inwardly of the section 48 to maintain the connection of the sections in triangular box-forming relation, as is quite conventional in package containers of this type.

The first fold at the end of the box body is indicated in Figure 8. Here it will be noted that the wall reinforcing flap 54 and triangular folding flap 58 are folded inwardly, the triangular flap 58 being folded at right angles to the wall reinforcing flap 54, the wings 60 being folded upwardly at right angles to the folding flap 58. When finally positioned, the reinforcing flap 54 rests against the inner surface of the section 47, the folding flap 58 fits within and fills the interior of the formed box body at right angles to its sections or walls and the wings 60 bear against the remaining sections 46 and 48 of the box body.

The second fold is illustrated in Figure 9 where the folding flap 63 and wall reinforcing flap 55 are turned inwardly, the wall reinforcing flap co-operating with the inner surface of the wall of the section 48 and the folding flap 63 overlying and resting upon the previously disposed folding flap 58. The final fold is shown in Figure 10 wherein the folding flap 63 and wall reinforcing flap 53 are folded inwardly against the section 46 with the wall reinforcing flap bearing against the inner surface of the section 46 and the section 53 bearing upon the previously applied folding flap 63.

It will thus be noted that each wall or main section of the box body is reinforced or of double thickness at one end and that inwardly of the reinforced portion of the wall, a bottom for the box is formed which is in triplicate and so arranged and disposed as to completely seal this end of the box body against leakage.

The inner container or drawer for use with the box body of triangular shape is illustrated in Figures 11 and 12. The blank, shown at 65 in Figure 11, has a main section 66 having a dimension to fit snugly within the box body of triangular form between the closed bottom and the free edge. At that end of the section 66 which co-operates with the free end of the box body, there is provided a triangular end wall 67 foldable with respect to the section 66 on fold line 68, with such end wall of triangular shape to correspond in size and shape to the interior of the box body and further formed on one triangular edge with a wing 69 having a curved free edge and projecting below the apex of the end wall 67 in a rounded form at 70, the opposite triangular edge of the end wall having a wing 71 to fit within the interior of the free end of the box body to hold the end wall in closing position.

The opposite end of the section 66 is provided with a triangular folding flap 72 foldable with respect to the section 66 on fold line 73 and with a laterally disposed additional folding flap 74 connected with the section 66 by a substantially triangular side wall section 75 having a curved free edge. The side wall section 75 is foldable with respect to the main section 66 on fold line 76 while the laterally disposed folding flap 74 is foldable with respect to the side wall 75 on a fold line 77 which is a continuation of the fold line 73. The folding flap 72 is provided with a locking tongue 78 and the laterally disposed folding flap 74 with a slit or incision 79 through which the tongue may be projected to hold the parts in position.

The sliding container or drawer is formed by bending the folding flap 72 upwardly on the line

73 at right angles to the section 66. The auxiliary folding flap 74 and side wall 75 are folded upwardly with respect to section 66 on the line 76 and the auxiliary folding flap 74 is then folded on line 77 in rear of the folding flap 72 and the tongue 78 passed through the incision 79, as indicated in Figure 12. Of course, the end wall 67 is folded upwardly and the wing 71 inwardly, the latter on fold line 80 to fit the open end of the box body when the drawer is in place, the wing 69 being folded outwardly on fold line 81 to provide a finger-piece for withdrawing and handling the drawer.

In both forms of the box construction, it will be noted that the closed end of the box body is of maximum strength for the material used in that it is of triplicate layers and that each of the flaps making up a layer has an integral connection with one of the walls of the box body and a section which folds down in contact with that wall not only to reinforce it but to seal the juncture against leakage. Thus, the closed end of the box, entirely without the necessity of any adhesive or other extraneous connector, is locked in proper relation to the walls of the box body by the super-imposed flaps and each side or wall of the box body is sealed by the arrangement of the bottom flaps against possible leakage beyond the bottom. The drawer of each form provides a side wall which tends to position and retain the material to some extent and a double thickness end wall to bear against the bottom, with the juncture of the side wall and end wall completely sealed against leakage. Thus, any materials in the drawer or inner container which tend to become soft in storage or when not in use, cannot possibly leak beyond the end wall of the inner container and will be withdrawn when the inner container or drawer is withdrawn.

Of course, either of the forms of boxes herein described may be made of any appropriate materials and obviously of any size longitudinally or transversely. The rectangular box body of the preferred form is made up of four walls and though shown of greater length and diameter, may obviously be of any relative lengths and diameters with particular regard to the materials to be stored in the package.

It is to be understood also that the various folding flaps are of such relative dimensions that each will be accommodated, in the regular order of folding, within the surface already formed by the previously folded flaps to secure a more or less frictional holding. This will dispense with the necessity of any adhesive though, if in a particular package, it is deemed advisable from the standpoint of extreme caution, adhesive may be employed in securing the parts in fixed relation.

What is claimed to be new is:

1. A box body made up of main sections foldable to present a hollow box completely open at one end, the opposite end of each of the main sections of the box having projecting tabs, each connected to its main section by a wall reinforcing flap foldable on predetermined lines with respect to the flap and to the main section, the tabs of one pair of opposing main sections being of the full interior area of the box, the tabs of the remaining main sections being of approximately one-half the interior area of the box, one of the full area tabs having side flaps foldable with respect to the tab and commensurate in width with the wall reinforcing flaps, the tab with the side flaps being initially folded to arrange the flap in position to close the interior of the box,

with the wall reinforcing flap and the side flaps of this tab bearing against three separate main sections of the box, the short length tabs being then folded to cause their wall reinforcing flaps to overlie the side flaps of the first folded tab, with the short length tabs together forming a single layer resting upon the first folded tab, the final full area tab being then folded to cause its wall reinforcing flap to cooperate with the main section with which it is connected and to overlie and bear upon both of the short length tabs to complete the bottom closure of the box.

2. A box having a triplicate bottom formed of tabs integral with the respective walls of the box, with each tab having a wall reinforcing means sealing the bottom of the box against leakage, the opposite end of the box being open, and a drawer fitted within the box and comprising a main section corresponding in width to that of one of the walls of the box, an end wall of double thickness integral with the drawer, and a side wall extending from the end wall for a distance materially less than one-half the length of the main section,

the remaining side edges of the main section being without projection.

3. A box having a triplicate bottom formed of tabs integral with the respective walls of the box, with each tab having a wall reinforcing means sealing the bottom of the box against leakage, the opposite end of the box being open, and a drawer fitted within the box and comprising a main section corresponding in width to that of one of the walls of the box, an end wall of double thickness integral with the drawer, and a side wall extending from the end wall for a distance materially less than one-half the length of the main section, the remaining side edges of the main section being without projection, the end of the main section opposite the end wall being provided with a flap serving to close the open end of the box when the drawer is in place and to provide a pulling flap for the drawer when the latter is to be removed.

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