United States Patent

Inacker

[15] **3,703,955**

[45] **Nov. 28, 1972**

[54] **MULTIPLE COMPARTMENT DISPENSING BOX**

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[22] Filed: **July 23, 1971**

[21] Appl. No.: **165,572**

[52] **U.S. Cl.**.....**206/42,** 206/56 AC, 220/20, 220/27

[51] **Int. Cl.**.....**B65d 83/04,** B65d 17/24, B65d 1/24

[58] **Field of Search**.....206/42, 56 AC; 220/20, 27

[56] **References Cited**

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[57] **ABSTRACT**

A dispensing box comprising a main body portion having a plurality of independent compartments therein and a cover interlocked with the box to close the compartments. The end walls of the compartments at the opposite sides of the box have reduced sections connecting them to the box proper which may be readily broken through so that the individual compartments may be opened for access by removal of their end walls without displacing the cover nor opening other compartments in the box.

10 Claims, 6 Drawing Figures

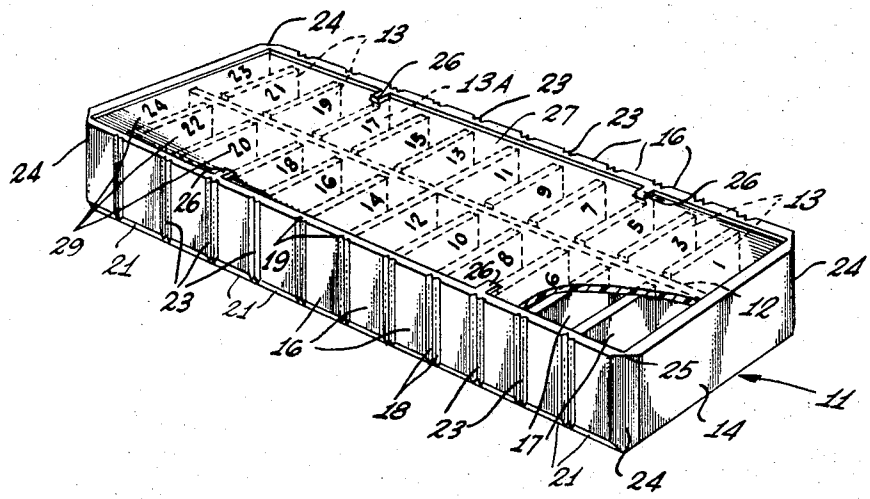


Fig. 1

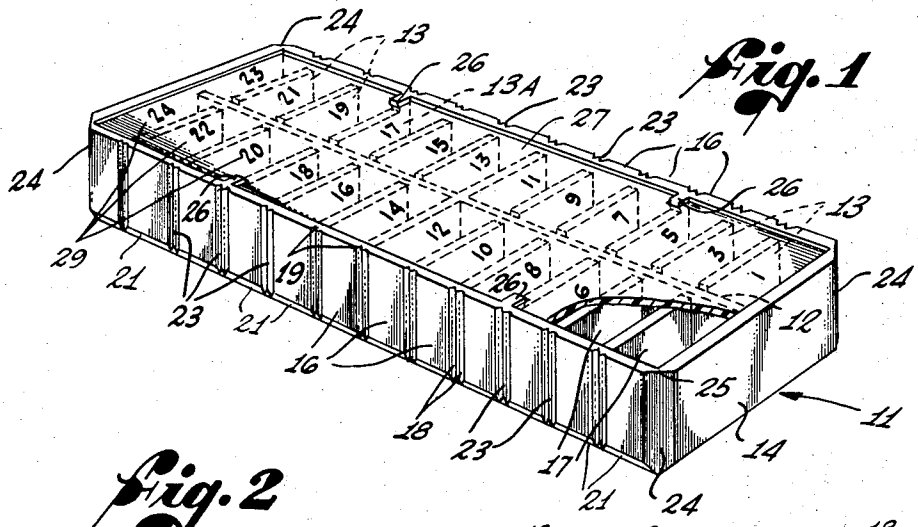


Fig. 2

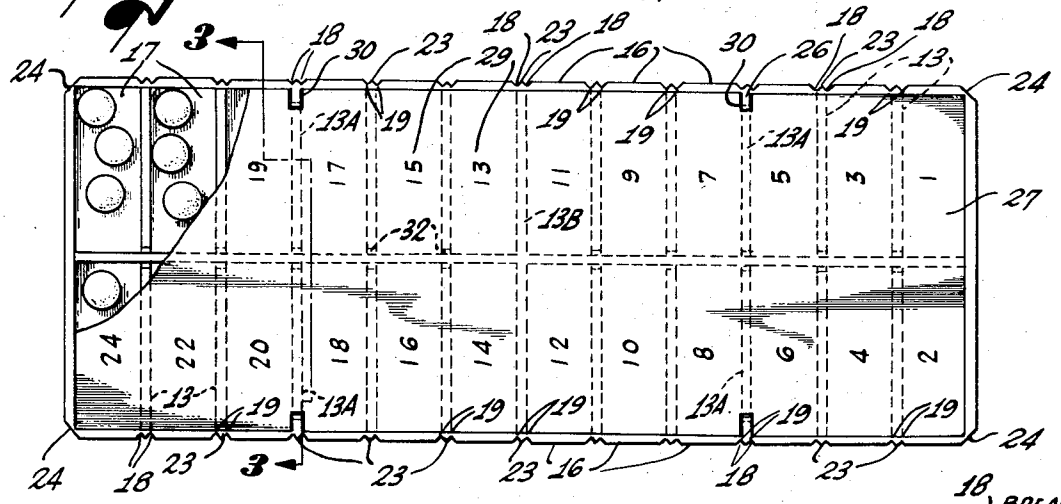


Fig. 3

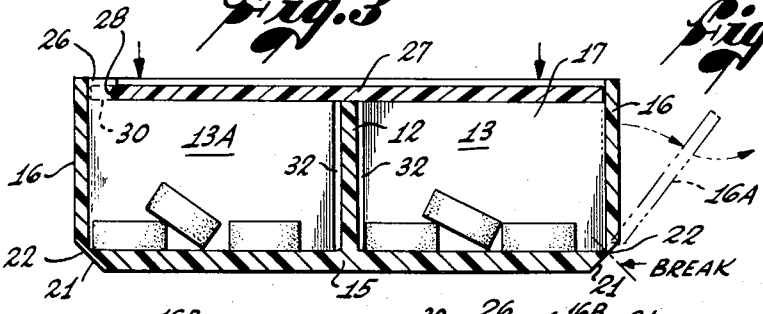


Fig. 4

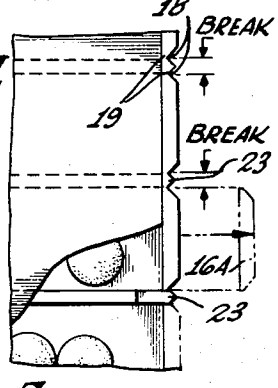
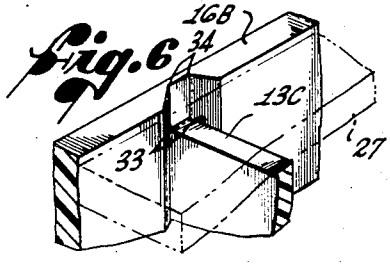


Fig. 6



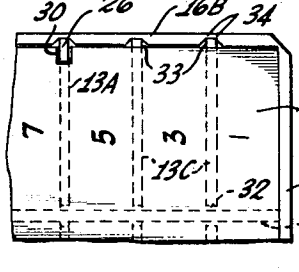


Fig. 5

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MULTIPLE COMPARTMENT DISPENSING BOX

BACKGROUND OF THE INVENTION

1. This invention is in the field of dispensing boxes having a plurality of compartments to which indivisual access may be had by breakaway portions.

2. Where items are to be dispensed in sequence as, for example, doses of solid medicine in the form of capsules or pills in definite quantities and identities over a period of time, the items are commonly segregated according to their types in separate bottles or containers, from several of which they must be counted to secure the desired number of each type to be dispensed, as in the medicine dosage. According to the present invention, a multiple-compartment dispensing box may be preloaded in its separate compartments with the number and kind of items which are to be dispensed each time, in the example given the number and type of pills constituting each medical dosage. The compartments remain intact until the items therein, such as pills and capsules, are to be dispensed, at which time an individual compartment is opened without disturbing the other compartments and the preloaded items of the open compartment dispensed, in the example, by giving the preloaded medicine to the patient. The one dispensing the items or giving the medicine need not identify the kinds and count the numbers of each kind, but simple takes from the individual opened compartment all of the items or medication therein. The dispensing box may thus be preloaded by a pharmacist or other skilled person and the user or dispenser simply removes, from the proper numbered compartment, the items or medication therein.

SUMMARY OF THE INVENTION

The present invention provides a multi-compartmented box having a cover which may be attached to the box to close the compartments therein after the compartments have been loaded with items such as medical pills and capsules which are to be dispensed. The compartments are preferably numbered, conveniently on the cover to identify the compartments thereunder and, if dispensing is done from the highest numbered compartment progressively downward through the numbers, the highest numbered compartment left unopened will directly give the number of groups of items or medicine dosages which remain in the box, thus facilitating the proper ordering of a new box to continue the dispensing of the items or the medication therein.

The box preferably has a central longitudinally extending wall with compartments located at the opposite sides thereof and with the side walls of the compartments separated from the central longitudinal wall of the box so as to give flexibility to the box to facilitate its removal from the main male die on which it is molded. The outer end walls of the compartments are connected to their side and bottom walls by reduced cross section of the plastic material of which the box is made so that these end walls may be readily broken away from the side and bottom walls of the compartments to open the compartments for dispensing of the items, such as medical pills, therein. The cover, which is also plastic material, preferably snaps into engagement with the box proper to close the compartments therein and

the cover is desirably provided with molded numbers thereon identifying the compartments thereunder. The cover and the box proper may be formed of any desired moldable plastic material, at least the cover being formed of a transparent plastic such as synthetic styrene plastic. The box as well may be formed of this material, if desired, since it provides the necessary flexibility to permit removal of the box from the die and to permit the cover to be snapped into engagement with the box proper while, at the same time, being sufficiently frangible to permit the outer end walls of the compartments to be broken away to provide access thereinto.

The box is provided with symmetrically disposed tabs at the tops of certain of its compartment-separating, transverse walls, at the outer ends thereof, and these tabs receive thereunder the rounded or inclined edges of slots at opposite sides of the cover, whereby the cover snaps in place and is tightly held against the box proper to close the individual compartments therein. The box has a longitudinally extending wall therein providing for rows of individual compartments at opposite sides thereof and the transverse walls which divide the compartments from each other are disconnected from the longitudinally extending wall except at the base of the box. This provides slots at the inner ends of the transverse walls whereby the box proper is given transverse flexibility so it may bend to permit the box to be withdrawn from the male die, particularly with respect to the cover-holding tabs which may be withdrawn bodily with the box without being broken therefrom as might occur with a substantially rigid box.

The end walls closing the compartments have a reduced cross section connection to the bottom of the box running longitudinally thereof and are provided with notches or grooves extending from the bottom to the top of the box at the opposite side edges of the compartment end walls, whereby the end walls may be readily broken at the sides and bottom from the main portion of the box to expose the compartment therebehind to access. This may be done by simple engagement of the fingernails or an implement with the top edge of the compartment end wall which is free of connection to the cover with external notches, the material of the box at the transverse walls extends outwardly between the notches defining the edges of immediately adjacent compartment end walls and strenghtens the intermediate wall so that the end wall breakage will always occur along the vertical notch defining the edge of the end wall of the compartment to be opened. With internal notches, they extend vertically at opposite sides of the outer ends of the transverse walls, partially through the opposite side walls of the box defining the end walls of the compartments. At the outer corners and the opposite side bottom of the box, the exterior wall is chamfered to provide the areas of small cross section which are broken as a compartment end wall is removed.

By starting with the highest numbered compartment and opening succeeding compartments in reverse number sequence, the highest number compartment which has not been opened will give a direct reading of the number of compartments or dosages left, without requiring an arithmetical computation.

Other objects and features of the invention will be apparent from the detailed description and the appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view with a portion of the cover broken away of a dispensing box according to the present invention;

FIG. 2 is a top plan view of the dispensing box of the invention with a corner of the cover broken away;

FIG. 3 is a transverse sectional view of the dispensing box of this invention on the line 3—3 of FIG. 2;

FIG. 4 is an enlarged, partial, top plan view of the dispensing box with a portion of the cover broken away;

FIG. 5 is an enlarged, partial top plan view of a modified form of dispensing box; and

FIG. 6 is a partial detail view of the modification of FIG. 5.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The dispensing box of the present invention comprises an elongated box proper **11**, of molded synthetic plastic, such as a styrene plastic, having a longitudinally extending dividing wall **12** and transverse walls **13**, defining, with end walls **14**, bottom wall **15** and opposite side walls **16**, individual compartments **17** spaced longitudinally of the box **11** and extending from the central longitudinal wall **12** to the opposite side walls of the box. The side walls **16** are integral with the bottom and transverse dividing walls of the box and together form the opposite side walls of the box **11**, but individually form outer end walls for the compartments **17**.

The walls **16** at their opposite edges are defined by vertically extending notches **18** leaving areas of small cross section at **19** by which the side edges of the walls **16** may be readily broken from the box. The bottom corners of the box are chamfered at **21** to likewise leave sections of small cross sectional area at **22** by which the compartment end walls **16** may be readily broken from the bottom **15** of the box. Between the notches **18**, the material of the separating transverse walls **13** is extended at **23** to insure the breakaway of each wall **16** at its notch in a clean, even manner. For the end compartments, the end corners of the box **11** are chamfered at **24** to leave sections of small cross sectional area at **25** to facilitate breaking off the end compartment walls **16**.

Certain transverse separating walls **13A**, at their outer ends, that is, at the opposite sides of the box **11**, are provided with integral tabs **26** which serve to hold in place a flat cover **27** having inclined or rounded edges at **28** at the ends of short slots **30** which snap under the tabs **26** to hold the cover **27** tightly in place against the walls **12**, **13** and **14** of the box **11**, thereby closing the individual compartments **17**. The cover **27** may be a flat plate of a transparent synthetic plastic, such as a styrene plastic, which affords a view of the interior of the compartments **17**.

The cover **27** is preferably provided with molded numbers at **29** which proceed in sequence from side to side and from end to end of the box **11** are spaced apart the same spacing as the compartments **17** to identify, by their number, the compartment **17** therebeneath. Therefore, if in dispensing items, such as medical pills or capsules, the user will start with the highest number, as illustrated, **24**, first breaking out the end wall **16** of that compartment to use the items therein and will then proceed to use the items in reverse numerical order, it will be seen that the highest number of an unused compartment will also give the number of compartments and hence medical dosages which remain in the box. This enables the user to immediately determine the number remaining without the necessity for an arithmetical computation and facilitates the proper reordering of a new box as the previous one becomes used.

The end wall **16** may be removed from the box **11** to open the compartment **17** therebehind, by engaging the top edge of the wall **16** between the transverse walls **13**, as with the users fingernails or with an implement and removing the wall **16** outwardly as indicated in dotted lines at **16A** of FIGS. **3** and **4**, breaking away the opposite edges of the wall **16** at the notches **18** and its bottom edge at the thin section **22**. The removed end wall **16A** may be discarded and the items **31** within that compartment **17**, i.e., the one shown at the right in FIG. **3**, used or consumed. As more particularly shown in FIGS. **2** and **3**, the transverse walls **13**, at their centers, are disconnected from the longitudinally extending wall **12** by slots **32** whereby the box **11** is made transversely more flexible so that it may be easily bent to facilitate removal from the male die section on which it was molded, this particularly permitting passage of the tabs **26**, which might otherwise be broken from a rigid box construction. The middle transverse wall **13B** may or may not be connected to the longitudinal wall **12**.

In the modification of the dispensing box of the present invention illustrated in FIGS. **5** and **6**, the notches **18** at the outside of the opposite side walls of the box **11** are replaced by notches or grooves **33** on the inside of the opposite side walls of box. These notches extend vertically from bottom to top at the opposite sides of the outer ends of the transverse walls, now designated **13C** and otherwise the same as the transverse walls **13** of the first described embodiment of the invention. The notches **33** leave small sections at **34** which are broken through as the compartment end walls **16B** are removed. The bottom break of the section at **22** remains the same as shown in FIG. **3** and other elements of the box, including the cover **27** and its mounting by tab **26** on transverse wall **13A** engaging the edge **28** of the slot **30** in the cover remain the same as previously described. These elements of the dispensing box have been given the same numerals as in the first described embodiment.

While certain preferred embodiments of the invention have been specifically illustrated and described, it will be understood that the invention is not limited thereto as many variations will be apparent to those skilled in the art, and the invention is to be given its broadest interpretation within the terms of the following claims.

I claim:

1. A multi-compartment dispensing box comprising:

a box proper defined by end, side and bottom walls of integral molded plastic;

a center, longitudinally-extending integral wall dividing the interior of the box into two longitudinally extending halves, said longitudinally extending wall also constituting the interior end walls of a plurality of compartments extending transversely therefrom;

transversely extending walls separating the compartments and constituting the side walls thereof, said transversely extending walls being integral with at least the bottom and side walls of the box proper;

the box side walls between said transversely extending walls constituting the outer end walls of the compartments; and

areas of reduced cross section where the compartment end walls engage the bottom and transversely extending walls which may be easily broken through to remove the end walls and provide for end access into the compartments.

2. The dispensing box defined in claim 1 including:

a cover extending over substantially the entire area of the box proper and interlocked therewith to form the top walls closing the compartments in the box proper.

3. The dispensing box defined in claim 2 in which said cover bears numerals running from side to side and end to end thereof and spaced the same distance apart as the compartments so as to identify each compartment in the box proper by the number on the cover thereabove,

said compartment end walls being removable to provide an access into the compartments without disturbing the cover.

4. The dispensing box defined in claim 1 in which the reduced cross-sectional areas at the sides of the compartment end walls are formed by notches running from the bottom to the top of the box proper adjacent the outer ends of said transversely extending walls.

5. The dispensing box defined in claim 4 in which said transversely extending walls extend outwardly between immediately adjacent notches defining immediately adjacent edges of compartment end walls so that the break-off of each compartment end wall is substantially limited to its own area.

6. The dispensing box defined in claim 4 in which the reduced cross-sectional areas between the compartment end walls and the bottom of the box are provided at bottom edge chamfers running angularly and longitudinally of the opposite side bottom edges to provide the reduced cross-sectional areas between interior corners of the compartments at the junctions of the outer end and bottom walls and the surfaces of the chamfers.

7. The dispensing box defined in claim 1 in which said reduced cross-section areas at the sides of the compartment end walls are formed at the bottoms of notches extending from the bottom wall to the top of the box proper interiorly of the compartments on opposite sides of the outer ends of the transversely extending walls.

8. The dispensing box defined in claim 1 in which said transversely extending walls terminate interiorly short of the longitudinally extending wall to increase the transverse flexibility of the box proper.

9. The dispensing box defined in claim 2 including:

symmetrically disposed tab means at the top outer ends of symmetrically disposed transversely extending walls;

short slots in the opposite edges of said cover receiving said tabs; and

the back edges defining said slots interlocking with the interior edges of said tabs to hold said cover in place on the box proper.

10. The dispensing box defined in claim 1 in which reduced cross-sectional areas at sides of the end walls of the compartments at the opposite ends of the box proper are provided by vertical chamfers of the end edges of the box proper which reduce the cross-section between the chamfers and the interior vertical corners between the end walls of the box and the outer walls of the end compartments.

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