Aug. 11, 1959 R. E. BUTNER ET AL 2,899,047

DISPENSING PILL BOX

Filed Dec. 6, 1957

FIG. 1.

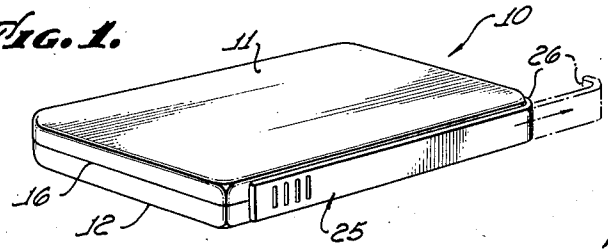


FIG. 2.

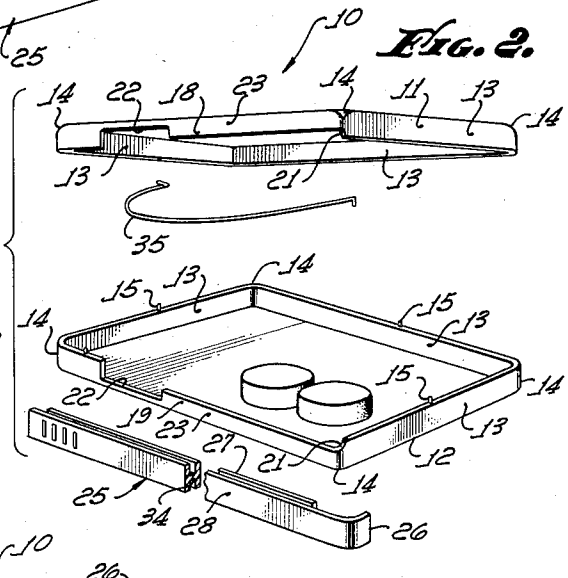


FIG. 7.

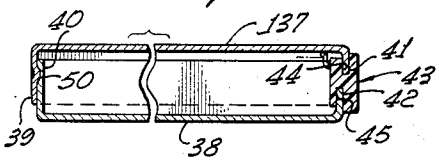


FIG. 3.

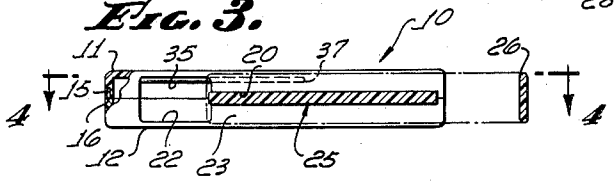


FIG. 5.

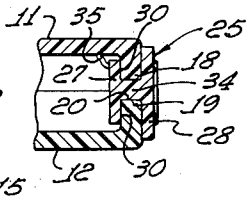


FIG. 4.

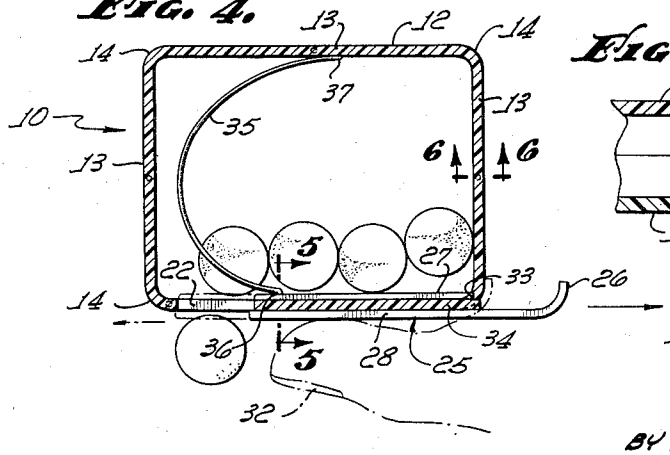
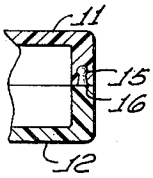


FIG. 6.



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DISPENSING PILL BOX

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8 Claims. (Cl. 206—42)

This invention has to do generally with pill boxes, and more particularly concerns an improved dispensing pill box that is manipulable to feed or drop pills one at a time without requiring opening thereof.

The invention particularly concerns a solution to the problem of obtaining pills from a box of the size of a common aspirin container, without requiring opening of the box such as often times results in spilling of several tablets therefrom. Such boxes are normally loaded before the cover is closed over the bottom of the container and locked in position as by engagement of crimped edges or detent elements.

Taking into consideration the manner of loading such boxes, it is a major object of the present invention to provide a dispensing pill box of improved design having an opening in at least one and preferably both of the box sections for spilling pills therethrough, certain edge portions of the box sections forming a slot extending along one side of the container for receiving closure means placed in the slot prior to fastening together the box sections, the edge portions of which hold the closure in the slot when the box sections are closed together. The closure normally extends both inside and outside of the box for guided manual retraction lengthwise along the slot exposing the pill opening to the box exterior. Finally, a bow spring carried in the box urges the closure into normal closing relation with the opening while being extremely flexible to permit retraction of the closure.

The invention is particularly adapted to incorporation in a plastic pill box wherein the bottom and cover sections have edges in face-to-face engagement, certain portions of the plastic box sections forming a slot extending between the sections at one side of the box for reception of a plastic closure bar, as will be described. Also contemplated is the provision of a closure bar in a metallic pill box having a cover overlapping the sides of the box bottom. As a result of the fact that the closure bar, when not retracted, completely covers the slot and pill opening in the box the latter remains as effectively closed as an ordinary Aspirin box, and therefore sanitary standards requiring tight closure of a pill box are satisfied.

These and other features and objects of the invention, as well as the details of an illustrative embodiment, will be more fully understood from the following detailed description of the drawings, in which:

Fig. 1 is a perspective view of the pill box showing the closure bar in forward or closed position;

Fig. 2 is an exploded view of the box, the closure bar and spring;

Fig. 3 is a side elevation of the box partly broken away and showing the cover bar retracted from the box opening;

Fig. 4 is a plan view taken in section on line 4—4 of Fig. 3;

Fig. 5 is a fragmentary section taken on line 5—5 of Fig. 4;

Fig. 6 is a fragmentary section taken on line 6—6 of Fig. 4; and

Fig. 7 is a section through a metallic pill box of somewhat modified design incorporating the invention.

In Figs. 1 through 6 the relatively thin, rectangular pill box 10 includes a cover 11 and a like bottom 12, each having four sides 13 and rounded corners 14. The plastic cover 11 is permanently connected to the plastic bottom 12 of the box as by the bayonet connections shown at 15 in Fig. 6 so that once the box is filled with pills and assembled, the cover cannot be removed from the bottom 12.

Edge portions of the cover and bottom extending along three sides and part of the fourth side of the box are held in face-to-face, or edge-to-edge contact at 16. However, certain edge portions 18 and 19 extending lengthwise along the fourth side of the box are spaced apart and form a lengthwise extending slot 20 that extends through a rounded rearward corner of the box at 21. A relatively deep opening 22 sized for spilling pills to the exterior of the box is formed in the fourth side 23 of the box bottom and cover to intersect the slot 20 at its forward end as better seen in Fig. 3.

Placed in a forward portion of the slot, and extending at the inside and outside of the edge portions 18 and 19 is an H-cross section closure bar 25, typically formed of plastic material, the closure normally completely overlapping both the slot and the opening 20 and 22, as viewed in Fig. 1. The closure is preferably but not necessarily as wide as the box in a vertical direction, and it extends rearwardly to terminate in a curved end portion 26 extending around the box corner so as to completely overlap the cutaway at 21 when the closure is in its forward position. Referring to Fig. 5, it is seen that the closure bar includes inner and outer flanges 27 and 28 that overlap the box cover and bottom edge portions 18 and 19 and which form grooves 30 in which these edge portions are received when the cover is closed down on the bottom after filling the box with pills. Therefore, advantage is taken of the permanent connection together of the box edge portions so as to hold the closure bar in position for guided lengthwise reciprocation.

When the box is turned on its side and the closure bar is retracted as indicated in Fig. 4 by engagement of the user's thumb 32 with the closure bar 25, the opening 22 is uncovered allowing pills to spill one at a time therethrough. Retraction of the closure bar is limited by engagement of the inner flange 27 with the inside of the box bottom at 33, at which time a rearward extension of the web 34 interconnecting the flanges 27 and 28 is received through the cutaway 21 as shown in Fig. 4. When the closure bar is released, it is urged forwardly to cover the opening 22 by a bow spring 35, typically made of thin music wire, one end of the spring being cemented or otherwise attached to an upper and forward portion of the closure bar at 36 and the opposite end of the spring being cemented or otherwise attached to the inner side of the box cover at 37 directly opposite the closure bar. The spring extends adjacent the upper inner wall of the box cover so as not to interfere with packing of the pills in the box bottom or spillage therefrom through the opening. In addition, the bow spring is extremely flexible and therefore permits easy retraction of the closure bar.

Fig. 7 shows a somewhat modified pill box having a cover 37 and box bottom 38, the edge portions 39 and 40 of which overlap along three sides of the box, as illustrated and are held together as by the detent at 50. The edge portions 41 and 42 along the fourth side of the box are spaced apart in offset or staggered relation so as to form a slot therebetween in which the closure bar 43 is received. The latter has offset grooves 44 and 45 receiving the offset edge portions 41 and 42, and the box is otherwise constructed in a manner similar to that shown in Figs. 1 through 5. The Fig. 7 container is

typically made of metal, and the showing indicates that the invention is readily adapted to incorporation in a metallic pill box having a cover overlapping the bottom of the box.

We claim:

1. An improved dispensing pill box, comprising closed together upper and lower complementary box sections having certain opposite edge portions forming a slot extending along one side of the box, said box sections forming an opening through said side and sized for spilling pills one at a time from the box interior to the exterior, means including a closure placed in the slot and extending both inside and outside of said certain edge portions in overlapping relation therewith and in covering relation with said opening for guided manual retraction along said slot exposing said opening to the box exterior while remaining retained in said slot by said edge portions, and a wire spring carried by the box urging said closure into covering relation with said opening said spring being anchored to said means and to a portion of the box remote from said means, said spring having a bowed portion all of which extends closely adjacent the inner face of one of said box sections in all positions of said closure, whereby pills packed in the box adjacent the spring and between the box section inner faces do not block bodily movement of the bowed portion of the spring during retraction of said closure.

2. An improved dispensing pill box, comprising closed together upper and lower complementary box sections having certain opposite edge portions forming a slot extending along one side of the box, said box sections forming an opening through said side and sized for spilling pills one at a time from the box interior to the exterior, said slot intersecting said opening, means including a closure placed in the slot and extending both inside and outside of said certain edge portions in overlapping relation therewith and in covering relation with said opening for guided manual retraction along said slot exposing said opening to the box exterior while remaining retained in said slot by said edge portions, and a wire spring carried by the box urging said closure into covering relation with said opening, said spring being anchored to said means and to a side of the box opposite said means, said spring having a bowed portion all of which extends closely adjacent the inner face of one of said box sections in all positions of said closure, whereby pills packed in the box adjacent the spring and between the box section inner faces do not block bodily movement of the bowed portion of the spring during retraction of said closure.

3. An improved dispensing pill box, comprising closed together upper and lower complementary box sections having certain opposite edge portions forming an elongated slot extending along one side of the box, said box sections forming an opening through said side and sized for spilling pills one at a time from the box interior to the exterior, means including an elongated closure placed in the slot and extending both inside and outside of said certain edge portions in overlapping relation therewith and in covering relation with said opening for guided rearward manual retraction along said slot exposing said opening to the box exterior while remaining retained in said slot by said edge portion, said closure having an H-shaped cross section in a plane normal to the length dimension of said closure, said closure completely overlapping said opening at the outside of said edge portions,

and a wire spring carried by the box urging said closure into covering relation with said opening, said spring being anchored to said means and to a side of the box opposite said means, said spring having a bowed portion all of which extends closely adjacent the inner face of one of said box sections in all positions of said closure, whereby pills packed in the box adjacent the spring and between the box section inner faces do not block bodily movement of the bowed portion of the spring during retraction of said closure.

4. An improved dispensing pill box, comprising complementary box sections including a bottom and cover held closed together and having certain opposite edge portions forming an elongated slot extending lengthwise of the box at one side thereof, said bottom and cover sections forming an opening through said side of the box and sized for spilling pills one at a time from the box interior to the exterior, means including an elongated closure bar placed in the slot and extending both inside and outside of said certain edge portions in overlapping relation therewith and in covering relation with said opening for guided rearward manual retraction along said slot exposing said opening to the box exterior while remaining retained in said slot by said edge portion, said closure having an H-shaped cross section in a plane normal to the length dimension of said closure, said closure completely overlapping said opening at the outside of said edge portions, and a bow spring carried by the box urging said closure into covering relation with said opening, said spring being anchored to said means and to the side of the box cover opposite said means, said spring having a bowed portion all of which extends closely adjacent the inner face of one of said box sections in all positions of said closure, whereby pills packed in the box adjacent the spring and between the box section inner faces do not block bodily movement of the bowed portion of the spring during retraction of said closure.

5. The invention as defined in claim 4 in which the remaining complementary box edge portions extend in interengagement.

6. The invention as defined in claim 5 comprising plastic box sections in which said remaining edge portions are in edge-to-edge contact.

7. The invention as defined in claim 4 in which said slot and opening are formed in the same lengthwise extending side of the box, the rearward end of said slot passing through a corner of the box, said means extending around said corner at the box exterior to completely cover the slot.

8. The invention as defined in claim 7 in which said means extending at the inside of said edge portions is forwardly spaced from said corner of the box and is engageable therewith upon rearward retraction of the closure to limit said exposure of the opening.

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