

March 21, 1967

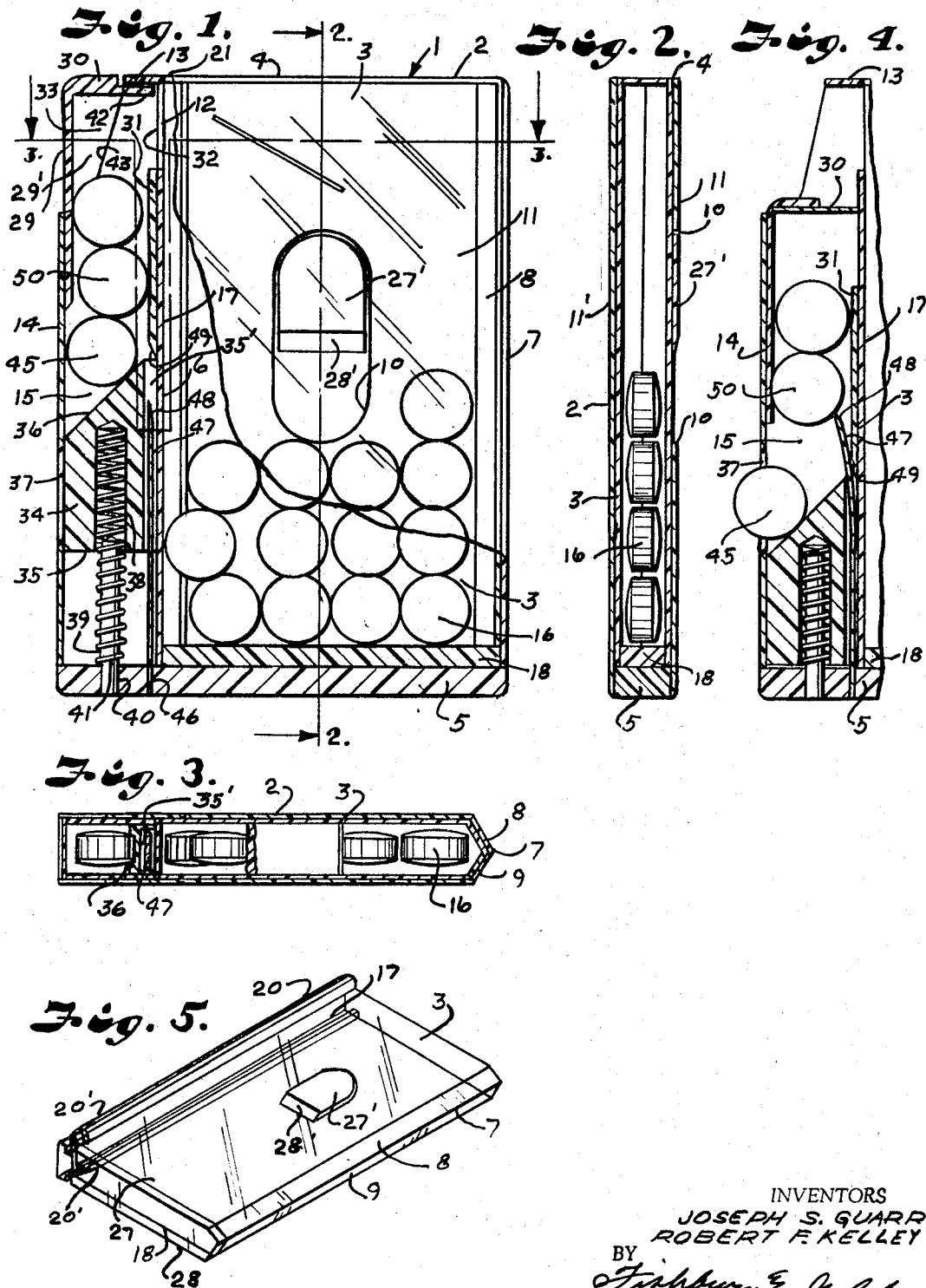
J. S. GUARR ETAL

3,310,201

FLAT PACK PILL DISPENSER WITH REMOVABLE MAGAZINE

Filed June 1, 1965

2 Sheets-Sheet 1



INVENTORS
JOSEPH S. GUARR
ROBERT F. KELLEY
BY
Fishburn & Hall
ATTORNEYS

March 21, 1967

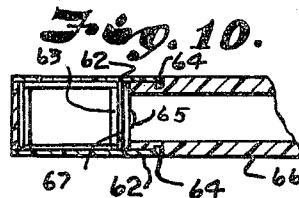
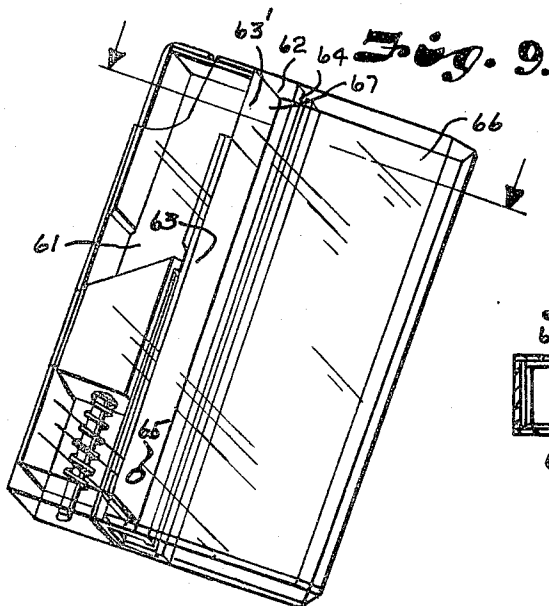
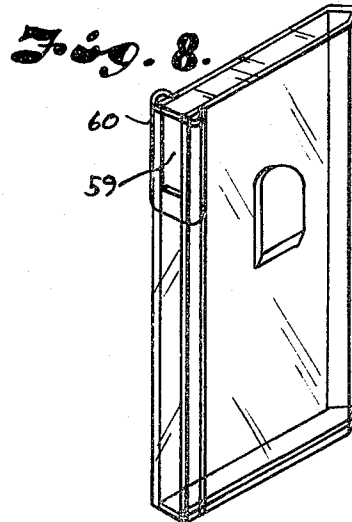
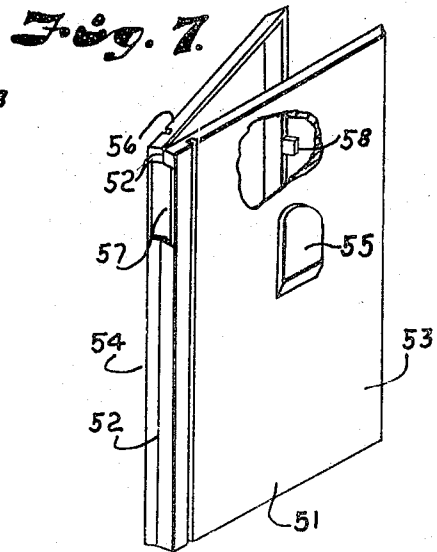
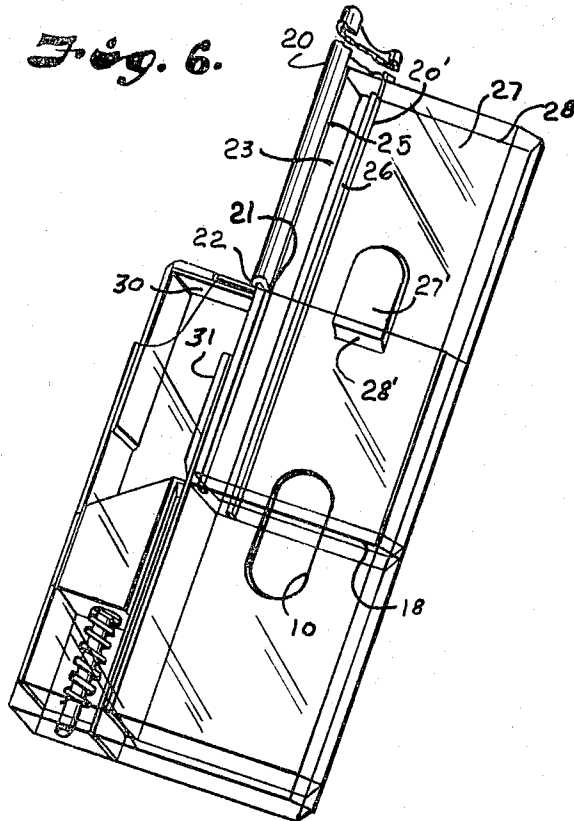
J. S. GUARR ETAL

3,310,201

FLAT PACK PILL DISPENSER WITH REMOVABLE MAGAZINE

Filed June 1, 1965

2 Sheets-Sheet 2



INVENTOR.
JOSEPH S. GUARR
ROBERT F. KELLEY
BY,
Robert F. Kelley
ATTORNEYS

1

3,310,201

FLAT PACK PILL DISPENSER WITH REMOVABLE MAGAZINE

Joseph S. Guarr, 1617 Mulvane, Topeka, Kans. 66604,
and Robert F. Kelley, 6126 Kenwood, Kansas City,
Mo. 64110

Filed June 1, 1965, Ser. No. 460,219

6 Claims. Cl. 221-197

This invention relates to improvements in dispensers for pills, tablets, capsules and the like, and more particularly to a dispenser which can be carried in the pocket of a user without discomfort or bulging of such pocket.

The present invention is an improvement over Patent No. 3,166,216 issued Jan. 19, 1965, wherein the dispenser is shown in the form of a pencil and the present invention being in a flat pack for more easy filling and dispensing of the pills from the pack, and still more particularly wherein a pack of pills may be purchased and the old empty pack removed and the new one replaced in the packet easily and quickly.

It is, therefore, the principal object of the present invention to provide a flat container for pills or the like adjacent a plunger for dispensing of the pills one at a time and wherein a receiving means is provided for a removable container for the pills so that a new container may be substituted therefor.

Other objects of the present invention are to provide a housing for the container for the pills with a beveled side edge and the opposite side edge engaging against a partition separating the pill dispensing mechanism from the housing for the container and the housing having one end open; to provide the housing with an elongated opening in one side thereof; to provide the container for the pills with a keeper member engageable in the opening in the housing to retain the packet therein and whereby pushing of the keeper member will release the packet from the housing to replace the same with a new container; to provide the container with an open side and having a keeper member slidable thereon and which will be automatically removed therefrom as the container is placed within the housing.

Still further objects of the present invention are to provide a hinged container to be container in the housing wherein the pills may be filled in the container in an open position and the container closed before inserting in the housing.

A still further object of the present invention is to provide a housing having longitudinal grooves along the sides thereof adjacent the open side edge thereof for receiving a sleeve member which engages over the open side edge and which may be removable therefrom.

Other objects and advantages of this invention will become apparent from the following description taken in connection with the accompanying drawings wherein are set forth by way of illustration and example certain embodiments of this invention.

FIG. 1 is a partly cross-sectional view of the pill dispenser with parts broken away to better illustrate the invention.

FIG. 2 is a longitudinal cross-sectional view thereof.

FIG. 3 is a transverse cross-sectional view taken on a line 3-3, FIG. 1.

FIG. 4 is an enlarged cross-sectional view with parts broken away, particularly illustrating the pill ejection mechanism.

FIG. 5 is a perspective view of the removable container or packet for the pills.

FIG. 6 is a perspective view of the pill container being inserted in the housing and particularly showing the removal of the keeper member or snap cover for the open side of the container.

2

FIG. 7 is a perspective view of a modified form of container molded in one piece with a portion broken away to show a closure latch.

FIG. 8 is a modified form of the container portion of the invention shown in perspective.

FIG. 9 is a perspective view of the invention shown in FIG. 8 particularly illustrating the plunger mechanism and the cover for the side of the housing having the flanges engaging in the grooves of the housing to retain the same together.

FIG. 10 is a cross-sectional fragmentary view taken on a line 10-10, FIG. 9.

Referring more in detail to the drawings:

1 designates a container and dispenser of pills embodying the features of our invention, comprising a housing 2 for receiving a container or packet 3 for pills or the like. The housing has an open top 4, a bottom 5 and a partition 6 and an outer side edge or wall 7 having beveled portions 8 and 9 for a purpose later described. The housing has an elongated opening 10 in the side and the partition 6 has an opening 12 near the top thereof. The housing also has a flange extension on the top portion 13 (FIG. 1). The housing includes a side wall 14 spaced from the partition 6 and forms a barrel portion 15 for the plunger mechanism later described.

A container or packet 3 is provided for the pills 16. The container has an open side edge 17, through which the pills 16 are inserted when filling the container. The lower end 18 of the packet is started in the open end 4 of the housing, and movement of the container into the housing as illustrated in FIG. 6 will automatically push a closure member 20 of the container therefrom as it engages the top edges 21 of the housing as indicated at 22 so that when the container is fully enclosed within the housing the closure member is removed therefrom. The closure member comprises a wall 23 and has its side edges turned laterally forming hooks 25 and 26 for engaging grooves 20' extending along the sides 27 and 28 of the container 3. The side 27 has a keeper member 27' which includes a sloping lower portion 28'. The member 27' engages into the opening 10 to maintain the container 3 in place in the housing. Thumb pressure on the member 27' releases same for withdrawing the container 3 for replacement.

The barrel 15 includes the plunger and dispensing mechanism somewhat similar to that disclosed in Patent No. 3,166,216. The plunger 29 is hollow at the upper end thereof as indicated at 29' and is slidable in the barrel 15. The plunger has a top 30 and a partial inner wall 31 provided with an opening 32 which aligns with the opening 12 in the partition 6 and open side 17 of the container to allow the pills to move from the container into the compartment 33 of the plunger as illustrated in FIG. 1. The plunger contains a piston portion 34 and a lower end 35. The side of the piston 34 facing the partition 6 has a vertical guide channel 35' extending therealong for receiving a flat spring member described hereinafter. The upper end of the piston portion is beveled as indicated at 36 and the side wall 14 of the housing has an opening 37 for the pills to move from the housing when the piston portion or plunger moves downwardly as will later be described.

The piston portion 34 has a central bore 38 for receiving a stem 39 secured to the bottom 5 of the housing as indicated at 40 (FIG. 1). A coil spring 41 encircles the stem and one end engages in the bore 38 so that the plunger is normally extended upwardly in the barrel so that the piston portion 34 will close the opening 37. A stop member 42 is provided at the top of the plunger and which engages against the top portion 13 of the housing also as shown in FIG. 1. The sides 11 and 11' of

3

the housing are cut away as indicated at 43 so that the user may push downwardly on the plunger with the finger of the hand to move the plunger in the barrel.

In this form of the invention, constructed and assembled as described, the container containing the pills is enclosed within the housing and by turning the housing the pills will move through the opening 12 of the partition 6 through the opening 32 and into the compartment 33 of the barrel. The lowermost pill 45 will engage against the beveled surface 36 of the plunger. Movement of the plunger downwardly against tension of the spring 41 will cause the pill to move through the opening 37 of the housing so that the pills will be dispensed therefrom when needed.

It will be noted the bottom 5 of the housing has a groove 46 for receiving a flat spring or panel 47, the end of which extends upwardly into the barrel 15 and has a beveled edge 48 and when the plunger is moved downwardly the beveled edge 49 of the partial inner wall 31 will be engaged by the beveled edge 48 to move the free end of the flat spring member 47 against the second pill 50 (FIG. 1) to retain the same in the plunger so that only one pill will be dispensed at a time.

FIG. 7 illustrates a modified form of container for the pills and consists of a one-piece container 51 having an integral flexible hinge 52 joining side box members 53 and 54 respectively along one common edge. A keeper member 55 is mounted on an exterior side of the box member 53 for engagement with the edges of opening 10 as in the preferred form of the invention. The hinge 52 extends to the upper edges 56 of the box members but is interrupted forming an opening 57, aligning with the opening 12 as shown in FIG. 1. An integral locking member 58 is mounted on one of the box members, engaging the other box members to effect closure of the container 51. The advantage of the container 51 rests in its ease of formation by single operation molding and ease of automatically filling the container prior to closing. This is made possible by the fact that the box members 53 and 54 may be widely separated for loading the container rather than requiring the pills to be inserted through a relatively narrow opening.

FIG. 8 illustrates a modified form wherein the longitudinal side edge is not open along its entire length such as in the embodiment of FIG. 5, but rather comprises a rather small opening 59 which aligns with the opening 12 in the structure of FIG. 1. The container of FIG. 8 does not require elongated snap closure member 20 but only a short closure member 60 which is ejected upon insertion of the container in the same manner described above in connection with the preferred form of the invention.

FIGS. 9 and 10 illustrate a modified form of the invention wherein the barrel 61 does not possess the housing 2 noted above in connection with FIG. 1 but only elongated parallel frame members 62 extending outwardly from the wall 63 which corresponds to the wall 17 in FIG. 1. The wall 63 has an opening 63' corresponding to the opening 12 also shown in FIG. 1. The frame members 62 are adapted to be received into the longitudinal grooves 64 corresponding to the grooves 20' in the container described with respect to FIG. 6. The container illustrated and described in FIGS. 9 and 10 may be similar to the other forms of the invention. The closure members as illustrated at 20 and 59 in FIGS. 6 and 8 are not shown since it is already assembled. A detent 65 extends rearwardly from the barrel 61 and is adapted to engage the container 66 so as to retain same in longitudinal position with respect to the barrel so that there is alignment between the barrel opening 63' and the container opening 67.

It will be obvious from the foregoing that we have provided a pill or like dispenser of a size which will fit into the pocket of a user readily and easily and one which may be filled at the factory and sold in packs or containers for refilling at the will of the user.

4

The dispenser may be made of any suitable material such as lightweight metal, plastic, transparent material. We prefer that the container of the pills proper be of a cheap material which may be thrown away after use.

It is to be understood that while we have illustrated and described one form of our invention, it is not to be limited to the specific form or arrangement of parts herein described and shown except insofar as such limitations are included in the claims.

What we claim and desire to secure by Letters Patent is:

1. A pill dispenser comprising,
 - (a) a rectangular-shaped housing having a bottom, sides and an open top,
 - (b) a barrel along one side of said housing having an open top and a closed bottom,
 - (c) a partition separating the barrel from the housing, said partition having an opening into said barrel near the top of the housing,
 - (d) a hollow plunger reciprocable in said barrel, said plunger having a closed top,
 - (e) a piston spaced below said top, a compartment defined in said plunger between said top and piston for receiving said pills in aligned relation therein, said compartment having an opening adjacent said top and capable of being aligned with the opening in the partition,
 - (f) means engaging the closed bottom of said barrel and said piston to normally urge the plunger to non-pill dispensing position, one wall of said plunger having its lower end beveled, forming a cam surface spaced above said barrel bottom,
 - (g) a container for pills receivable in said housing, said container having an open side edge engageable against said partition when inserted in said housing,
 - (h) a closure member for said open side edge of the container for retaining said pills therein, said container being slidable in and removable from the housing and said closure member being removed from the container as the container slides into the housing, and
 - (i) a pawl secured in said barrel alongside said piston and having a free end provided with a cam surface opposing the cam surface on said plunger wall adapted to engage said first named cam surface whereby said free end of said pawl upon reciprocation of the plunger toward said closed end of the barrel will move away from the partition and into the path of pills in said compartment so that only one pill will be dispensed upon each reciprocation of said plunger.
2. A pill dispenser comprising,
 - (a) a rectangular-shaped housing having a bottom, sides and an open top,
 - (b) a barrel along one side of said housing having an open top and a closed bottom,
 - (c) a partition separating the barrel from the housing, said partition on having an opening into said barrel near the top of the housing,
 - (d) a hollow rectangular shaped plunger reciprocable in said barrel, said plunger having a closed top,
 - (e) a piston formed on one end of said plunger and spaced from said top forming a compartment in said plunger for housing said pill in aligned relation therein, said hollow portion of the plunger having an opening near the top thereof and capable of being aligned with the opening in the partition,
 - (f) resilient means engaging the closed bottom of said barrel and said piston to normally urge the plunger to non-pill dispensing position, one wall of said plunger having a beveled portion forming a cam surface,
 - (g) a container for pills receivable in said housing, said container having an open side edge engageable against said partition when inserted in said housing,
 - (h) a closure member for said open side edge of the

5

container for retaining said pills therein, said container being slidable in and removable from the housing and said closure member being removed from the container as the container slides into the housing, and

- (i) a pawl secured in said barrel alongside said piston and having a free end provided with a cam surface facing opposite to the cam surface on said plunger wall adapted to engage said edge of said first named cam surface whereby said free end of said pawl upon reciprocation of the plunger toward said closed end of the barrel will move away from the partition into the path of the pills and contact one of said pills in said compartment so that only pill will be dispensed at each reciprocation of said plunger.

3. The combination of claim 2 wherein said barrel has an outer wall and an opening therein and said plunger has a wall slidable along said barrel outer wall and said plunger wall has an opening adjacent said piston alignable with said outer wall opening upon reciprocation of said piston to pill dispensing position.

4. The combination of claim 2 wherein said resilient means of paragraph (f) includes a stem in its bottom facing said plunger, a coil spring encircles said stem and the lower end of said piston has a bore for receiving said stem and coil spring.

5. The combination of claim 2 wherein said barrel includes a stop member at the top thereof against which the top of said plunger engages when in normal non-pill dispensing position.

6. A pill dispenser comprising:

- (a) a pill ejection means having enclosing wall means defining a hollow barrel for receiving a plurality of pills, said barrel defining a first opening for receiving pills in one of said wall means and a second opening for the ejection of the pills longitudinally offset from said first opening in another of said wall means and including means reciprocally moveable

6

longitudinally of said barrel for selectively opening and closing said second opening,

- (b) a pill container comprising a relatively flat hollow member having end edges and proportioned to receive a plurality of pills in single layers in edge-to-edge contacting relation, said box member defining an opening in aligned relation with said first opening in said barrel for passage therethrough of pills from the container to said barrel,
- (c) receiving means on said barrel and adapted to releasably retain said container and said ejection means together with said first opening in said barrel in aligned relation to the opening in said box member,
- (d) said pill container including side walls having opposed grooves therein, and
- (e) enclosure member having opposed flanges slideably engageable in said grooves for closing said pill container opening, said closure member being engageable with said receiving means whereby said closure member is ejected when said pill container is engaged with said receiving means.

References Cited by the Examiner

UNITED STATES PATENTS

1,196,105	8/1916	Groom	221—287 X
1,951,413	3/1934	Hope	221—154 X
2,256,074	9/1941	Crebbs	221—61 X
2,475,738	7/1949	Epplin	221—197
2,777,568	1/1957	Booth	133—5 X
2,894,612	7/1959	Care	133—5 X
2,955,724	10/1960	Deucher	221—287 X
3,091,364	5/1963	Ayres	221—185 X
3,138,165	6/1964	Erickson et al.	133—5
3,159,308	12/1964	Passavanti	221—289
3,176,696	4/1965	Stevens	133—5
3,269,597	8/1966	Passavanti	221—281 X

SAMUEL F. COLEMAN, *Primary Examiner.*