

[54] CAPSULE OR PILL DISPENSER-SURE WAY
DIAL A PILL

[76] Inventors: **Thomas C. Dangles; Elsie R. M. Dangles**, both of 10424 Lavergne, Oak Lawn, Ill. 60453

[22] Filed: **Mar. 18, 1974**

[21] Appl. No.: **451,978**

[52] U.S. Cl. **221/82; 206/533; 206/534; 221/155**

[51] Int. Cl.² **G07F 11/00**

[58] Field of Search **221/82, 91, 89, 112, 113, 221/155; 206/42; 220/20; 215/1 R; 116/121**

[56] References Cited

UNITED STATES PATENTS

2,828,005	3/1958	Ricke	221/89 X
3,393,795	7/1968	Covert	206/42
3,744,672	7/1973	Dangles	221/82
3,800,940	4/1974	Thomas	206/42

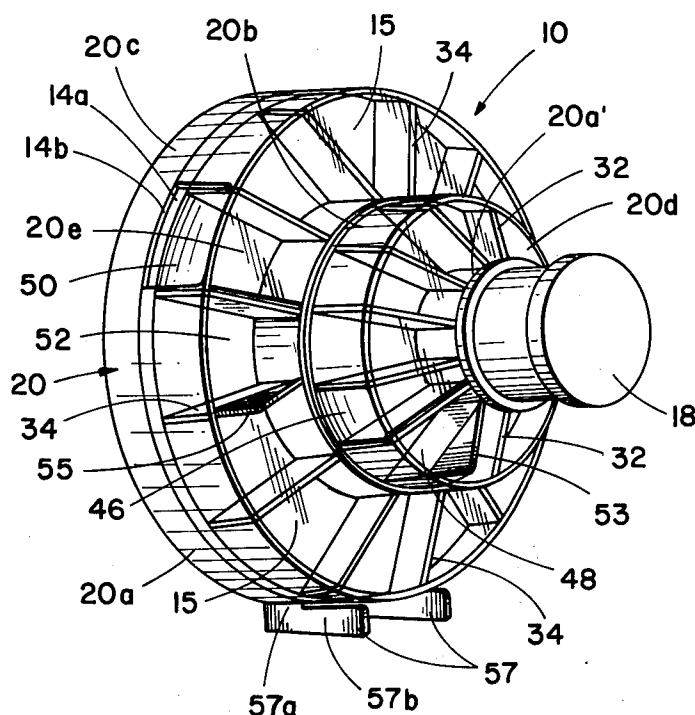
Primary Examiner—Allen N. Knowles
Attorney, Agent, or Firm—Richard J. Myers

[57]

ABSTRACT

A pill dispensing container having upper and lower pill storage tiers each having twelve radial pill storage compartments each having an embossed hour indicia of the day for 24 hour use. Each tier is covered by a rotatable dial cover having a generally horizontal opening for pill insertion and a vertical opening for pill discharge clockwise one compartment of the horizontal opening. Each tier has a tier rotating tab on the horizontal surface of the tier dial cover adjacent the horizontal opening and a tier stop permitting only clockwise movement of the tier dial cover and being on the underside of each dial cover horizontal surface adjacent the tab and horizontal opening. A pair of pedestal members project from the vertical side of the container base below the lower tier for supporting at right angles to the pill dispensing position in balanced condition the dispenser container in a general vertical storage position so as to view the indicia in vertical elevation on the slope bottom walls of each tier.

7 Claims, 6 Drawing Figures



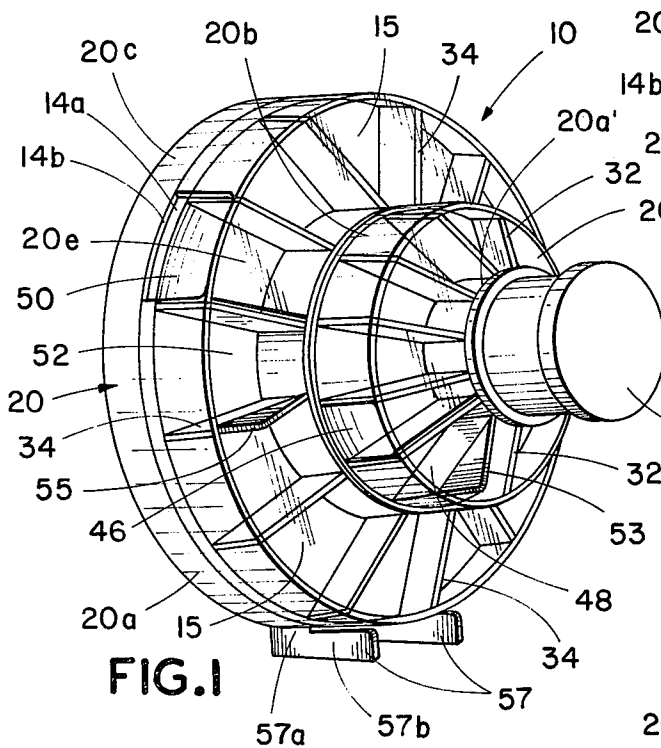


FIG. 1

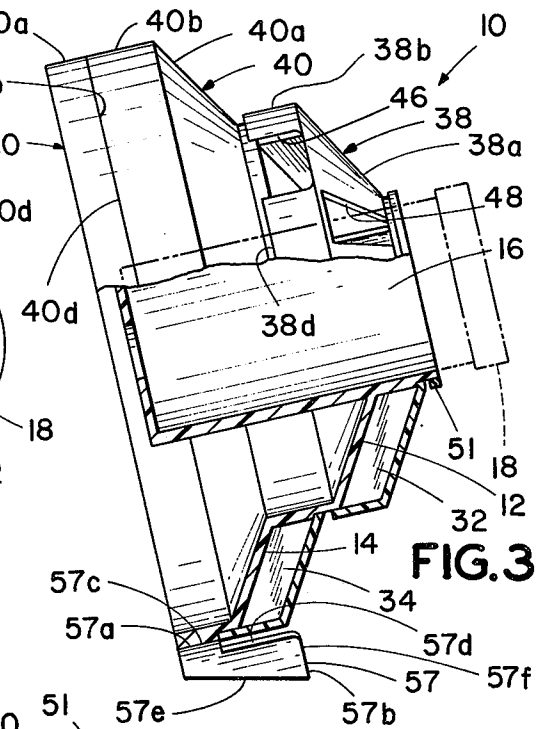


FIG. 3

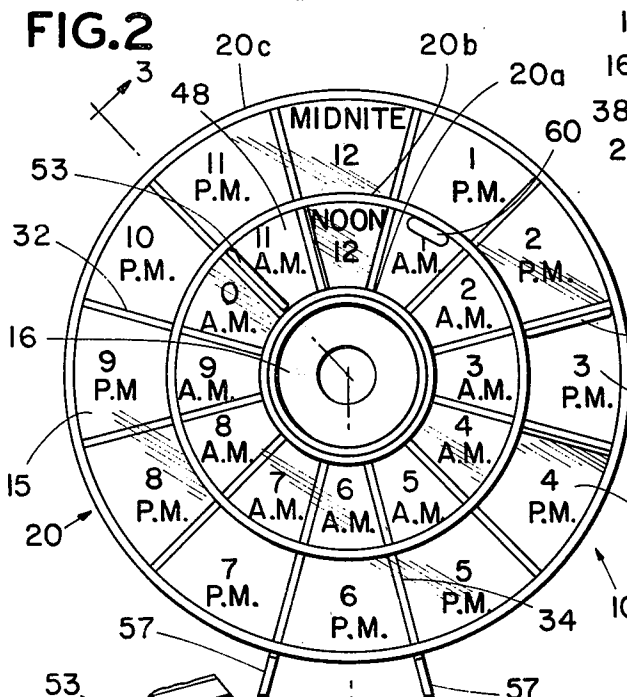


FIG. 2

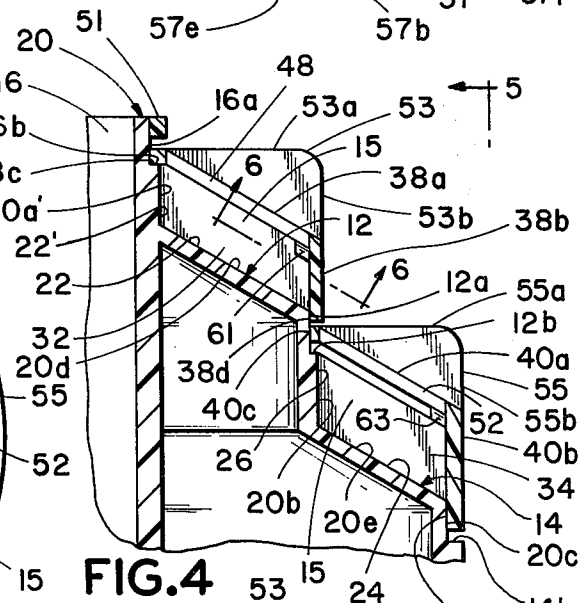


FIG. 4

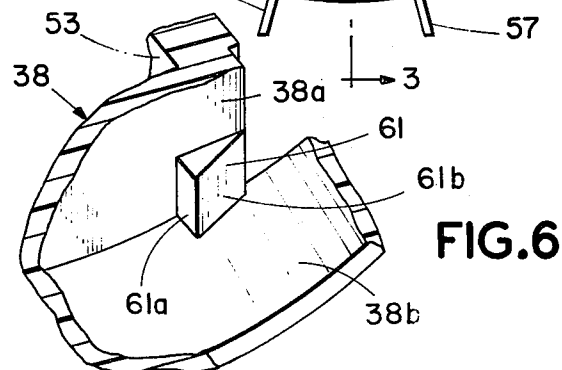


FIG. 6

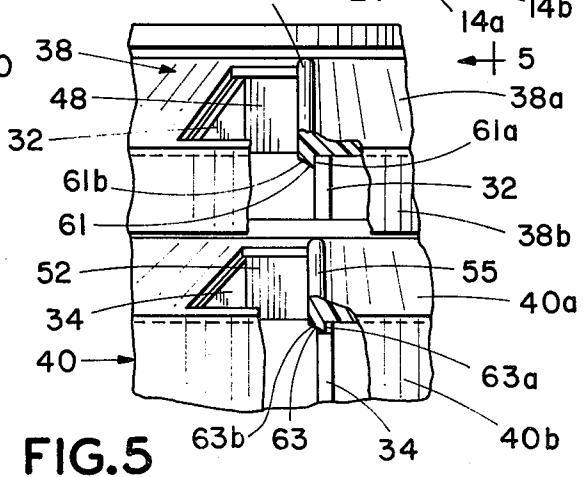


FIG. 5

CAPSULE OR PILL DISPENSER-SURE WAY DIAL A PILL

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to pill dispensers and in particular to a pill dispenser that allows the user to load and dispense pills on an hourly basis around the clock.

2. Description of the Prior Art

The prior art discloses the use of such around-the-clock dispensers as, for instance, shown by U.S. Pat. No. 3,744,672 to Thomas Dangles et al. and which patent is hereby incorporated by reference thereto in the instant specification. It is desirous to provide means to rotate the dispensing tier dial covers of the device as well as limit their rotation in a given direction and to store the pill dispenser in the nondispensing position as well as the use position. This is what the invention accomplishes.

SUMMARY OF THE INVENTION

The nature of the present invention relates to operating structure of a pill dispenser at time intervals where the dispenser may be placed in a pill dispensing position or in an upright position for non-use where the novel embossed hour indicating indicia can readily be seen.

The invention provides for tab means to rotate each 12 hour dispenser tier dial cover and further provides means to prevent tier dial cover rotation in the opposite direction.

It is a further object to provide for pedestal members on the sides of the base of the dispenser to hold the dispenser in a vertical position to view through the transparent surfaces of the dispenser the embossed clock indicia on the sloped surfaces of the dispenser tiers in a clear manner.

It is a further object of the invention to provide for tab elements adjacent the inlet openings on the tiers to allow rotation of the tier dial covers and stop elements on the underside of the tier ceilings adjacent the inlet openings to prevent undesirable not time scheduled counterclockwise rotation of the tier dial covers.

Still another object of this invention is to provide for dial arrangement for the pill dispenser where the lower dial cover is held on by the upper dial cover which is in turn held on by a pressure ring.

These and other objects and advantages of the invention will become apparent from reference to the following description, appended claims and attached drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the pill dispenser in the upright non-pill-dispensing or non-use position whereby a viewer can see the hour indicia embossed on the bottom walls of each tier, as seen, for instance, in FIG. 2;

FIG. 2 is a top plan view of the pill dispenser whereby the embossed hour indicia can be seen through the clear plastic top surfaces of the dials covering the tiers;

FIG. 3 is a view, partially in section, taken along line 3—3 of FIG. 2;

FIG. 4 is a partial sectional view of the invention illustrating the rotating tabs and stops in elevation;

FIG. 5 is a partial front elevational view taken along line 5—5 of FIG. 4; and

FIG. 6 is a partial perspective view of the inside of a dial cover which carries the rotating tab and the stop.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, there is shown a pill dispenser 10 of similar construction to that shown in the aforementioned U.S. Pat. No. 3,744,672 which has been incorporated herein by reference and, therefore, similar structure in the patent and the instant application will bear the same reference characters.

The pill dispenser 10, of transparent material such as plastic, has an upper inner annular tier 12 and a lower outer annular tier 14, each having a plurality of radially extending pill dispensing compartments 15. The central opening 16 in the center of the dispenser stores a pill bottle 18. The dispenser 10 includes a base unit 20 of three vertically spaced cylindrical portions 20a, 20b and 20c connected by sloped cone portions 20d and 20e and defines an upper inclined floor portion 22 with an upright annular wall 22' and a lower floor portion 24 connected to the upper floor by intermediate upright wall 26. Extending radially from the centrally disposed opening 16 are a series of upper and lower fin-like wall portions or dividers 32, 34 which form the side walls of the pill carrying compartments 15. The upper tier floor portion 22 has embossed thereon the hours from 1 A.M. to noon inclusive, one hour being in each compartment, and the lower tier floor portion 24 has the hours from 1 P.M. to midnight embossed thereon, one hour being in each compartment.

The upper tier 12 is covered by the associated cover or dial 38 of clear or transparent plastic material, and the lower tier 14 is covered by the associated cover or dial 40 of clear or transparent plastic material. Therefore, by looking through the covers 38 and 40 the embossed indicia of the hours is seen. The lower dial 40 is fitted onto the lower tier 14 of the base unit 20 to enclose the lower compartments, and the upper dial 38 is then fitted on over the upper tier 12 of the upper part of the base unit 20 to close the upper compartments. The upper dial cover 38 includes an outwardly and downwardly sloped roof or top cover portion 38a and an annular vertical rim or side wall portion 38b, and a top opening 48 in the roof portion 38a is shaped to conform to the outline of the compartments 15 and expose a respective entire compartment for easy loading of pills and capsules. A side discharge opening 46 is located in the vertical wall 38b of the upper dial 38 and is peripherally and arcuately spaced from the top or loading opening 48 in a clockwise direction to provide for discharging of adjacent compartments 15. Similarly, the lower dial 40 includes a top or roof portion 40a and a side wall or annular vertical rim portion 40b, the side wall portion 40b having a side discharge opening 50 clockwise of and adjacent to a top loading opening 52 in the roof portion 40a.

The smallest cylindrical portion 20a of the base unit 20 is provided with an upper annular wall or recessed rim portion 16a about the opening 16 but extending from and above the upper tier 12 and defining with the tier an annular ledge 16b. The portion 16a receives thereabout in snug relation pressure ring or retaining ring 51 for holding the upper dial 38 on the upper tier 12, which upper dial or cover 38 holds the lower cover or dial 40 on the lower tier 14. The central cylindrical portion 20b has an intermediate sized recessed vertical annular wall or rim 12a extending between the upper

tier 12 and the lower tier 14 and this rim terminates at the annular ledge 12b defined by the upper end of the lower tier 14. This rim portion 12a receives the lower end portion of the annular vertical rim portion 38b of the upper dial 38 thereabout. The lower and larger cylindrical portion 20c has a lower annular rim or recessed wall portion 14a located between the bottom of lower tier 14 and the lower annular base rim 20a of the base unit 20, the top of the rim 20a presenting the ledge 14b adjacent the rim portion 14a. In assembly, the lower tier cover 40 has its lower annular edge 40d seating against the ledge 14b adjacent the base rim 20a and the inner wall portion of the vertical rim portion 40b of the lower dial 40 is adjacent and frictionally engages the rim portion 14a. The upper annular opening 40c of the lower dial 40 rims intermediate rim portion 12. The top dial 38 sits over the lower dial 40 and has its lower edge 38d seating against the intermediate rim portion 14a and the top opening 38c of the upper dial 38 rims the upper rim portion 16a. Lastly, the retainer pressure ring 51 sits over the upper opening 38c of the upper dial 38 and around the upper rim 16a whereby the ring 51 holds down the top cover 38 which, in turn, holds down the lower cover 40 against the base rim 20a.

With reference now to FIGS. 1-5, there is shown tab means for rotating each of the tier covers or dials with respect to each of the tiers. An upper tab 53 is located on the upper dial at the right side of the upper opening 48 for rotating the upper dial 38 relative to the upper tier 12, and a lower tab 55 on the lower dial 40 is located on the right side of the lower opening 52. The tab 53 is triangular in shape and provided with a top horizontal edge 53a and a vertical edge 53b, and, similarly, the tab 55 is triangular in shape and has an upper horizontal edge 55a and a vertical edge 55b. The base unit 20 of the pill dispenser 10 is provided with pedestals or feet 57 which are attached to the lower annular base rim 20a by its rear attachment top part 57a from which extends the elongated horizontal feet support 57b. Each pedestal or foot 57 is further provided with an upward canted or angled edge 57c, a forward canted or angled edge 57d, a bottom support surface 57e and a vertical edge 57f. The pair of feet 57 permit the pill dispenser to stand on an edge or in a vertical upright position to permit viewing of the hour indicia marked on the sloped surfaces 22 and 24 of the tiers 12 and 14, as viewed in FIGS. 1-3. An upper stop 61 is provided on the inside edges of the upper dial 38 on the insides of the surface 38b at the juncture of surfaces 38a and 38b, as seen, for instance, in FIGS. 3-6. A lower stop 63 is similarly provided on the inside of the surface 40b at the juncture of the surfaces 40a and 40b of the lower dial 40 as seen in FIGS. 3-5. Stop 61 is provided with a vertical stop surface 61a and a sloped surface 61b and stop 63 is provided with a vertical stop surface 63a and a sloped surface 63b. The sloped surface 61b permits the dial 38 to ride past a respective upper divider 32 in a clockwise direction and the vertical stop surface 61a prevents counter-clockwise movement of the dial 38 with respect to any divider 32. Similarly, the surfaces 63a and 63b of the stop 63 cooperate with the lower dial 40 to allow clockwise movement of the dial 40 with respect to the lower tier but prevent counter-clockwise movement of such dial 40 in a manner as shown by stop 61. In FIGS. 4 and 5, the stop 63 has its sloped surface 63b on the bottom edge of runner 34 with the dial 40 being slightly elevated thereat. The bottom skirt or

edge of the upper dial 38 is sufficiently spaced about the top of the lower dial 40 (see FIG. 3) to permit this raising of dial 40 by the sloped surface 63b.

The operation of the pill dispenser is as stated in the aforesaid U.S. Pat. No. 3,744,672, wherein the numbering of the indicia on the upper and lower dials proceeds in a clockwise direction. The dial covers 38 and 40 are rotated in a single revolution clockwise for pill loading the compartments 15 of both the upper tier 12 and the lower tier 14. The dial covers 38 and 40 are rotated a single revolution clockwise for pill unloading. For loading or unloading, each dial 12 or 14 can be rotated for a full 12 hour time period. The discharge or unloading hole 46 or 50 is adjacent to but preceding the respective loading hole 48 or 52, i.e., a particular discharge hole 46 or 50 is spaced one compartment clockwise from its respective loading hole 48 or 52. The sloped floors 22, 24 of each compartment urge the pills 60 out when the discharge openings 46, 50 are rotated into alignment with a compartment 15 at the desired or required time. It thus can be seen that one revolution of each of the upper and lower dial covers is necessary for pill loading in a 24 hour period and one complete rotation of each of the dial covers is necessary for pill discharging in a 24 hour period.

The foregoing description and drawings merely explain and illustrate the invention and the invention is not limited thereto, except insofar as the appended claims are so limited, as those skilled in the art who have the disclosure before them will be able to make modifications and variations therein without departing from the scope of the invention.

What is claimed is:

1. A pill dispenser comprising:

a base unit having a stepped shaped contour forming a plurality of vertically spaced tiers and said base unit also having a central portion,

a plurality of divider members extending radially from said central portion and forming pill storage compartments on each tier,

dial cover means fitted for rotatable movement over each tier, and the associated storage compartments to thereby prevent unintentional discharge of the contents of each storage compartment, and

each dial cover means including a top pill loading opening and also including a side discharge opening to thereby provide means for loading pills into the compartments upon selected indexing of said rotatable dial cover means, and also to thereby provide means for selectively discharging pills from said compartments, and

said base unit including an annular vertical rim encircling the bottom of the base unit,

pedestal means mounted on said vertical rim and having a support surface means at an acute angle to the base rim surface for mounting said pill dispenser in a generally upright position but at a slight inclination whereby said upper end of the central opening is tilted for holding an associated pill bottle therein with the base rim being generally horizontal but slightly inclined for balancing of the pill dispenser in an on-end position in a generally vertical but slightly inclined to the vertical plane, said support surface adapted to lie on a horizontal surface and support said base unit in a generally perpendicular relationship to the base unit bottom surface.

2. A pill dispenser comprising:

5

a base unit having a stepped shaped contour forming a plurality of vertically spaced tiers and said base unit also having a central portion,
 a plurality of divider members extending radially from said central portion and forming pill storage compartments on each tier,
 dial cover means fitted for rotatable movement over each tier and the associated storage compartments to thereby prevent unintentional discharge of the contents of each storage compartment, and
 each dial cover means including a top pill loading opening and also including a side discharge opening to thereby provide means for loading pills into the compartments upon selected indexing of said rotatable dial cover means, and also to thereby provide means for selectively discharging pills from said compartments, and
 stop means mounted on the inside of each dial cover means and including a generally vertical surface engageable with a divider member to prevent counter-clockwise rotation of said dial cover means with respect to said tier and having an inclined surface generally transverse to the lower edge of said divider member and engageable therewith for allowing clockwise rotation of said dial cover means with respect to said tier for allowing upward movement of a dial cover means.

3. A pill dispenser comprising:
 a base unit having a stepped shaped contour forming a plurality of vertically spaced tiers and said base unit also having a central portion,
 a plurality of divider members extending radially from said central portion and forming pill storage compartments on each tier,
 dial cover means fitted for rotatable movement over each tier, and the associated storage compartments to thereby prevent unintentional discharge of the contents of each storage compartment, and
 each dial cover means including a top pill loading opening and also including a side discharge opening to thereby provide means for loading pills into the compartments upon selected indexing of said rotatable dial cover means, and also to thereby provide means for selectively discharging pills from said compartments, and
 stop means including a stop mounted on each dial cover means and engageable with a tier divider member to allow clockwise rotation of the dial cover means with respect to the tier but to prevent counter-clockwise rotation thereof.

4. The invention according to claim 3, and each said stop being mounted on the top under surface of each said dial cover means and having a stop surface and a slope surface at right angles to said stop surface, said stop surface and said slope

6

surface being engageable with a respective divider member to allow for clockwise rotation and prevent counter-clockwise rotation of the dial cover means with respect to a tier.

5. The invention according to claim 4, and the upper dial cover means having less vertical extent to its rim than the lower dial cover means for allowing sufficient spacing between both dial cover means upon upward movement of the lower dial cover means toward the upper dial cover means when the stop slope surface of the lower dial engages the divider.

6. The invention according to claim 4, and the lower dial cover means being mountable over and upon the lower tier and the upper dial cover means being mounted over the upper tier and having its lower extremity spaced above the upper portion of the lower dial cover means a sufficient distance to allow partial rising of the lower dial when the slope surface of the stop of the lower dial cover means contacts a divider member of the lower tier.

7. A pill dispenser comprising:
 a base unit having a stepped shaped contour forming a plurality of vertically spaced tiers and said base unit also having a central portion,
 a plurality of divider members extending radially from said central portion and forming pill storage compartments on each tier,
 dial cover means fitted for rotatable movement over each tier, and the associated storage compartments to thereby prevent unintentional discharge of the contents of each storage compartment, and
 each dial cover means including a top pill loading opening and also including a side discharge opening to thereby provide means for loading pills into the compartments upon selected indexing of said rotatable dial cover means, and also to thereby provide means for selectively discharging pills from said compartments, and
 each tier including a generally horizontal but sloped cone portion and a vertical rim portion depending from said sloped portion,
 each dial cover means including a generally horizontal but sloped portion and a vertical skirt rim portion,
 the lower dial cover means being fitted over the lower tier and the upper dial cover means being fitted over the upper tier and preventing the lower dial from being removed, and
 means mounted around the opening above the upper dial cover means and preventing removal of the upper dial cover means, and
 said means mounted including a pressure ring.

* * * * *

60

65