

[54] PILL DISPENSER

3,393,795 12/1966 Covert, Jr. .... 206/533 X

[76] Inventor: Joyce L. Wawracz, 9108 Upton Ave. South, Bloomington, Minn. 55431

Primary Examiner—Allen N. Knowles  
Attorney, Agent, or Firm—James R. Haller; H. Dale Palmatier

[22] Filed: June 10, 1974

[21] Appl. No.: 477,674

[57] ABSTRACT

[52] U.S. Cl. .... 206/534; 116/121; 206/533

[51] Int. Cl.<sup>2</sup> ..... B65D 85/56

[58] Field of Search ..... 206/534, 538, 533, 459, 206/539; 116/121; 221/5

A pill dispenser particularly useful for elderly patients having reduced muscular control and who must take a large number of pills each day. The dispenser includes 28 separate pill-receiving compartments, each at least 0.15 cubic inches in volume. A slotted circular cover rotatably mounted at the top of the dispenser may be rotated into alignment with any of four different times of a day for any of 7 days of the week, so that the pills for a given time of a given day can be dispensed at one time.

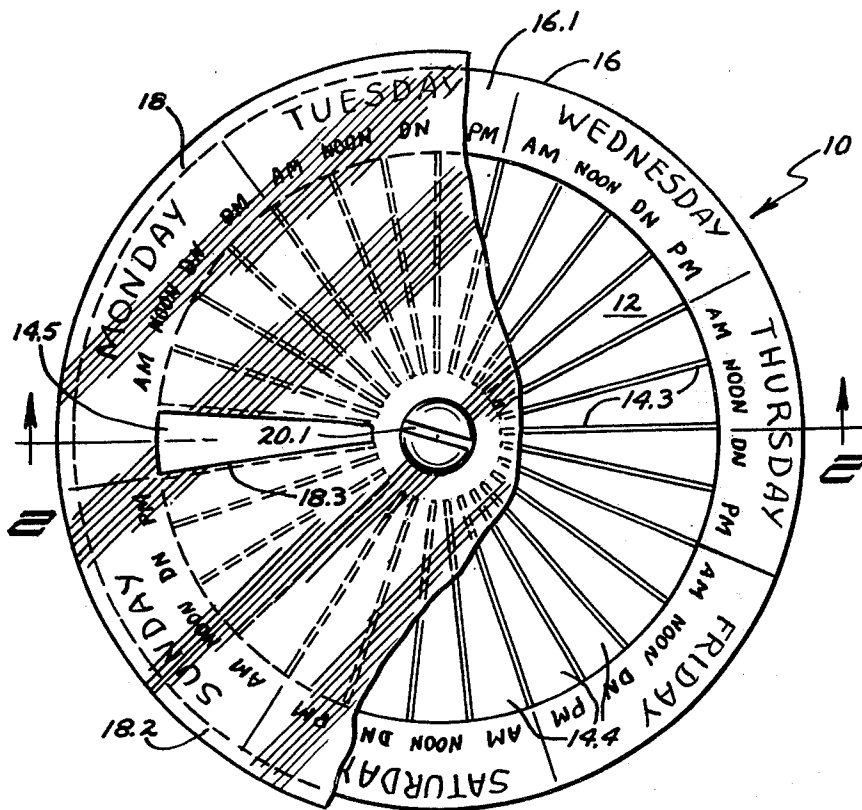
[56]

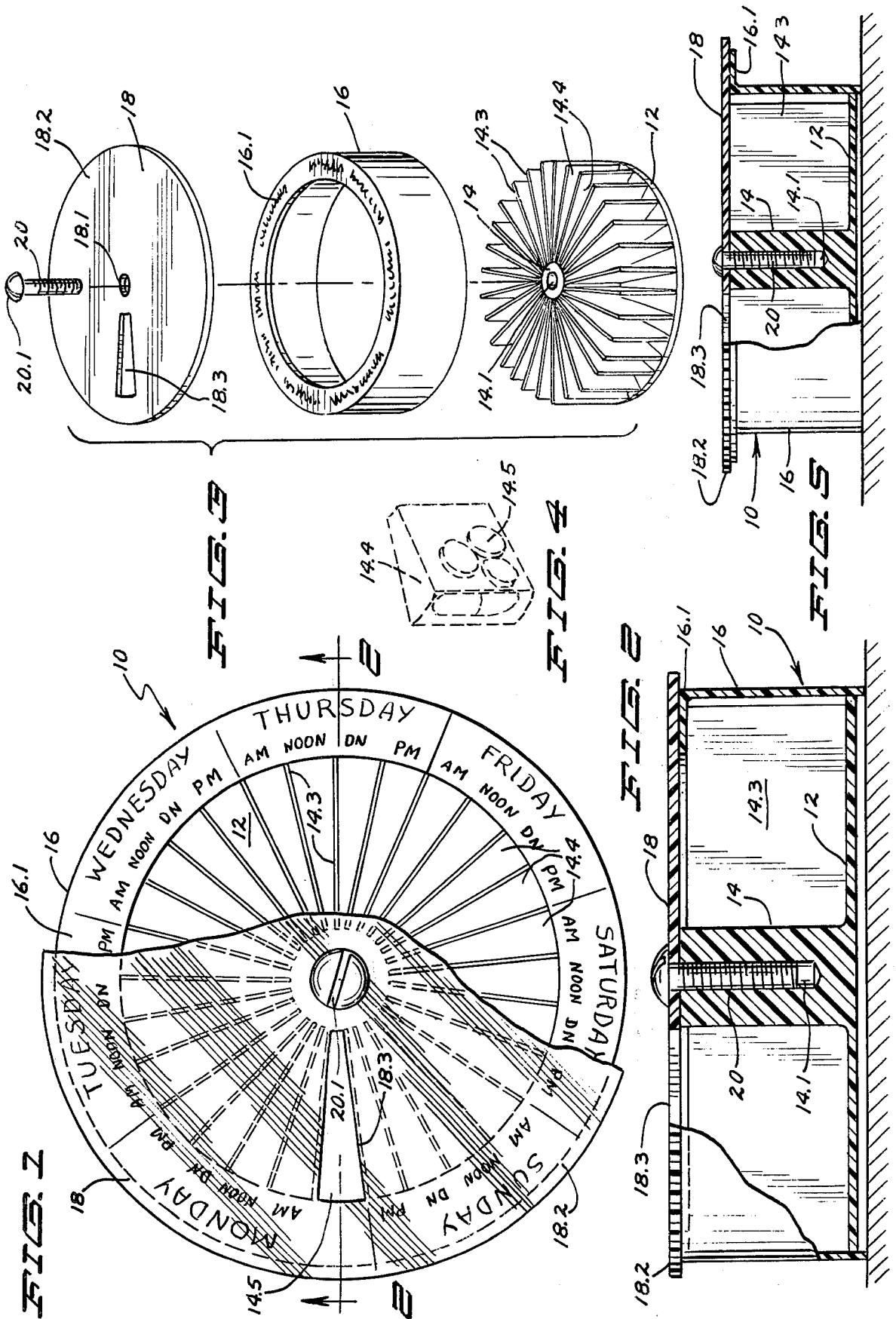
References Cited

UNITED STATES PATENTS

2,573,311	10/1951	Cupler .....	206/459 X
2,903,127	9/1959	Dorman .....	206/538 X
2,953,242	9/1960	Shaw .....	206/534

13 Claims, 5 Drawing Figures





## PILL DISPENSER

## BACKGROUND OF THE INVENTION

It is well known that many elderly patients, particularly those with such ailments as arthritis and heart disease, must take quite a large number of medicinal pills each day. Such pills may range from simple aspirin tablets to diuretic tablets, digitalis tablets, and the like, and may range in size from very small pills to fairly large gelatin capsules. Some tablets must be taken four times each day, whereas others may be taken only once or twice each day. In any event, such patients must often take two, three, or more pills at a single time. For home usage, pills ordinarily are purchased in bottles by patients and the patients must then read and follow the dosage instructions on the bottle. Although this is a simple matter when only a single medicine is involved, it often becomes difficult to keep track of medicines when several medicinal pills are to be taken at different times of the day. Understandably, it is often difficult for a patient to recall how many or what kind of tablets should be taken at any particular time of the day, and on occasion patients will forget whether a tablet has been taken or is to be taken. Such forgetfulness, which is not an uncommon trait of elderly patients, can lead to overdoses of medicines which may be very serious, as when digitalis pills are being taken.

A dispenser for dispensing pills to patients which would overcome or alleviate the problems mentioned above would be very desirable. Unfortunately, there is no dispenser on the market of which I am aware which permits one to automatically keep track of which of many pills have been taken, and to permit more than one pill to be dispensed at a time. In fact, although some effort has been directed towards pill dispensers in recent years, substantially all of such dispensers were for "birth control" pills. Examples of such devices may be found in U.S. Pat. Nos. 3,533,371; 3,495,567; 3,743,085, etc, and each of such devices dispenses a single pill per day. Such devices are expected to be small and fashionable for carrying in a purse, and may even be provided with a compact mirror such as shown in U.S. Pat. No. 3,651,927. In addition to dispensing the single pill per day, such devices are often mechanically quite sophisticated and require some sophistication on the part of the user in order to enable proper operation of the dispenser. Such dispensers do not have compartments for receiving more than one pill, nor can they be easily operated by a physically handicapped person, nor are these dispensers adapted to furnish a week's supply of pills and tablets wherein more than one tablet is taken at a time several times a day. A pill dispenser which would overcome these deficiencies and which could be easily manipulated and used by elderly or arthritic persons, would be highly beneficial.

## BRIEF SUMMARY OF THE INVENTION

The pill dispenser of the present invention is adapted to carry a week's supply of pills, and enables several pills to be administered as many as four times per day. The pill dispenser may be easily operated by a person with poor muscular control or with arthritis or the like. The pill dispenser comprises a cylindrical container having a circular base plate with a central upright mounting post and an upright, circumferential wall rising from the periphery of the base plate. The upright wall terminates upwardly in a horizontal, annular

flange. A plurality of upright divider walls are radially disposed within the container between the center post and circumferential wall, the divider walls being equally spaced circumferentially to divide the container into at least 28 pie sliced-spaced, pill-receiving compartments each having a volume of at least 0.15 cubic inches, and a blank pie sliced-shaped section. The horizontal flange is divided into at least 29 segments corresponding to the 28 pill-receiving compartments and the blank section. Upon the upper surface of the flange opposite each sequential group of four sequential compartments are written the names of the seven day of the week, and the flange also contains written indicia for each of the four compartments in each group relating to four times of the day, such as morning, noon, dinner, and evening. A circular cover is rotatably connected at its center to the upstanding center post of the container by a screw or the like, the periphery of the cover being serrated and extending beyond the periphery of the circumferential walls so that the cover can be easily be grasped by one hand and turned while the lower portion of the compartment itself is grasped by the other hand of the user. The cover has a pie sliced-shaped slot oriented to overlie each of the pie sliced-shaped compartments as the cover is rotated to permit the removal of pills from a given compartment for a given day and given time of that day. The cover is transparent, or cut out, adjacent its periphery so that a user may read the day of the week and time of the day of the week and time of the day on the horizontal flange which corresponds to the compartment over which the slot is aligned. The "blank" pie slice-shaped section is provided so that the slot on the cover may be positioned thereover when the pill dispenser has been completely filled, thus preventing pills from inadvertently escaping from the dispenser when the latter is carried in a purse or the like. The pie sliced-shaped compartments are sufficiently large to accommodate several pills of the size of aspirin tablets or the like, so that a number of pills can be dispensed from each compartment.

## DESCRIPTION OF THE DRAWING

FIG. 1 is a plan view of a dispenser of the invention, shown partially broken away;

FIG. 2 is an elevational view of the dispenser of FIG. 1, shown partially broken away and in partial cross section;

FIG. 3 is an exploded view of the dispenser of FIGS. 1 and 2, showing assembly of the parts thereof;

FIG. 4 is a diagrammatic view of a single pie sliced-shaped compartment of a dispenser of the invention; and

FIG. 5 is an elevational view of a modified dispenser of the invention, shown partially broken away and in partial cross section.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to FIGS. 1-3, the dispenser of the invention is designated generally 10, and includes a circular base plate 12 having a centrally positioned, upright mounting post 14, the latter having an axial hole 14.1 which is open upwardly. As shown best in FIG. 3, a cylindrical, upstanding wall 16 is joined to the periphery of the base plate 12, and terminates upwardly in a horizontal flange 16.1. A disc-like circular cover 18 is provided with a central hole 18.1 through which a pin,

depicted as screw 20, may pass for reception in the hole 14.1 which may be threaded to receive the screw. The screw 20 has an enlarged head 20.1 which bears upon the upper surface of the cover 18 adjacent the hole 18.1, the head of the screw urging the cover against the upper surface of the post 14. The horizontal flange 16.1 is of substantially the same height as the central post 14, and is hence slidably contacted by the periphery of the circular cover 18. The periphery 18.2 of the cover extends beyond the periphery of the cylindrical walls 16, and is serrated as shown best in FIG. 2 so that the cover 18 can be easily grasped and turned with respect to the base plate 12 and cylindrical walls 16. The circular cover 18 is also provided with a single pie sliced-shaped slot 18.3, the purpose of which will be subsequently explained.

A plurality of stationary upright divider walls 14.3 are radially disposed between the center post 14 and the cylindrical wall 16 to divide the space between the post and cylindrical wall into at least 28 separate pie sliceshaped compartments 14.4, each compartment having a volume (defined by the height and radial length of the divider walls 14.3 and the space between adjacent divider walls) of at least 0.15 cubic inches. In addition to the at least 28 compartments 14.4, there is provided an additional pie slicedshaped segment 14.5 which may be in the form of a compartment like the others or which may be of solid plastic or the like.

When the cover 18 is mounted to the upright mounting post 14 of the base plate, the cover may be rotated with respect to the base plate so that the pie slice-shaped slot 18.3 in the cover sequentially comes into alignment with each of the pie sliced-shaped compartments 14.4, permitting pills to be added to or retrieved from the compartments. When all of the compartments contain at least one pill, the slot 18.3 in the cover can be turned rotated into alignment with the additional pie sliced-shaped segment 14.5, which itself contains no pills. When the cover has been so oriented, the dispenser 10 may be carried in a purse or the like without fear of spillage. It will be understood, of course, that the screw 20 may be turned down with varying degrees of tightness so as to vary the manual force required to turn the cover 18 with respect to the base plate 10.

Referring now to FIG. 1, it will be seen that the 28 pie sliced-shaped compartments are divided into seven groups containing four compartments each, each group of four compartments corresponding to a given day of the week, and each compartment within a group corresponding to a given time of the day. The indicia relating to days of the week, and also time of day, are provided on the upper surface of the flange 16.1 which, in FIG. 2, is seen to extend inwardly from the cylindrical walls 16. Since the circular cover 18 is transparent, at least in the region of the slot 18.3, the indicia on the upper surface of the flange 16.1 can be easily read. The flange 16.1, which is stationary with respect to the compartments 14.4, is divided into seven segments which are respectively directly adjacent each of the seven groups of four compartments, and on the upper surface of the flange for each group of four compartments is written the name of the day of the week. Spaced inwardly slightly from the indicia as to days of the week, and opposite each of the four compartments within each group, is written a time of the day such as AM, Noon, DN (dinner) and PM, or such as 8:00 am, Noon, 4:00 pm, and 8:00 pm, or the like. Although the indicia relating to days of the week on the flange 16.1 are in-

tended to be permanent, the radially inwardly spaced areas of the flange upon which may be written the times of each day may initially be left blank and may be filled in by a pharmacist, doctor, or the patient. In this regard, the surface of the flange to be filled in may be chemically etched or roughened so as to become more receptive of pencil or ink markings.

With reference to FIG. 4, each of the compartments 14.4 are of sufficient volume to hold a number of pills (designated 14.6) therein. I have determined that the volume of each such compartment which is required to hold a suitable number of pills such as three or four pills the size of aspirin tablets should be at least 0.15 cubic inches, and desirably at least 0.2 cubic inches. If the pill dispenser of the invention is approximately 1 inch thick by 3 1/2 inches in diameter (the diameter of the circumferential walls), and if the thickness of all walls is approximately three sixty fourths inches with the center post being 1 inch in diameter, than the volume of each of 29 equal compartments (28 compartments plus one "blank" compartment or segment) will be in the neighborhood of 2.2 cubic inches, and this volume is capable of readily holding up to four ordinary five-grain aspirin tablets, or considerably more tablets of a smaller size. Adjacent the circumferential wall, the compartment may receive a gelatin capsule having a diameter of up to about one fourth inches and a length of up to about three fourths inches, with space remaining in the compartment for various other tablets, as shown in FIG. 4.

The dispenser shown in FIGS. 1 and 2 may be assembled as shown in FIG. 3 from three plastic parts (the base plate with integral divider walls, the circumferential wall with inwardly directed flange, and the cover plate with slot and central hole). Of these pieces, it may be desirable to mold from a thermoplastic material the base plate with divider walls, and also the circumferential wall with flange, and to stamp the cover from plastic sheet stock. The flanged circumferential wall has an inner diameter which fits tightly against the outer edges of the divider walls, with the lower surface of the flange fitting tightly against upper surfaces of the divider walls. The flanged circumferential walls may be glued or otherwise fastened in position. The top of the center post 14 is at the same level as, or may be very slightly depressed from, the top surface of the flange 16.1. In this manner, when the cover 18 is connected fairly tightly to the center post 14 by means of the screw 20, the cover 18 will bear upon not only the top surface of the center post but also the top surface of the flange 16.1. Since the cover 18 is desirably of plastic and with a thickness of approximately three sixtyfourths inches, it has some flexibility such that if the upper surface of the center post is slightly depressed with respect to the top surface of the flange, the cover plate will assume a configuration which is very slightly concave upwardly; this feature also permits the tightness of the cover 18 to be adjusted with some ease by tightening or loosening the screw 20 so that some minimal effort must be expended by the user in order to turn the cover to rotate the slot 18.3 from one compartment to an adjacent compartment. The screw threads are desirably tightly held within the bore of the threaded center post so that the screw remains stationary with respect to the center post when the cover is rotated. Desirably, the direction of the screw threads is such that if the screw does accidentally turn in the hole 14.1 when the cover is rotated in use (e.g.; from one day to the following day), the

screw is threaded further into the hole.

FIG. 5 depicts a modified form of the dispenser of FIGS. 1-3 in that the flange 16.1 is turned outwardly rather than inwardly as shown in FIG. 2. With the configuration shown in FIG. 5, the base plate 12, circumferential wall 16, center post 20, and divider walls 14.3 can be molded as a single unit, thus reducing manufacturing costs. Moreover, whereas the inwardly turned flange 16.1 in the embodiment of FIGS. 1-3 requires pills to be carefully removed from each compartment so that the pills do not accidentally become lodged underneath the flange, the embodiment of FIG. 5 permits the pills to be removed directly outwardly from each compartment. On the other hand, if the individual compartments of the dispensers of FIG. 2 and FIG. 5 are to be of the same size, then the diameter of the cover 18 of the embodiment of FIG. 5 must be somewhat greater than that of the cover of FIG. 2, since the cover must extend beyond the periphery of the flange 16.1 in each embodiment.

The dispenser of the invention is preferably made of a thermoplastic such as polypropylene, and wall thicknesses of the walls of the base plate 12, the circumferential wall 16 and the cover 18 may be slightly thicker than the divider walls separating adjacent compartments. Moreover, with reference to FIG. 2, the inner corner at the juncture of the horizontal flange 16.1 and the cylindrical wall 16 may be filleted to reduce any tendency of pills to become lodged in this corner area. The divider walls, base plate, horizontal flange and circumferential walls may be transparent, translucent, opaque, or colored if desired. The cover 18 is desirably completely transparent so that the day and time indicia on the upper surface of the flange 16.1 can be seen through the cover. In this regard, it is necessary only that a sufficient area of the cover adjacent its periphery and adjacent also the slot be transparent so the day of the week and the time of day for the compartment aligned with the slot can be seen. In another embodiment, a segment of the cover adjacent its periphery may be cut away to expose the indicia relating to the day and time of day corresponding to the compartment over which the slot is aligned, and it may be desirable to extend the thus cut away portion to include the slot itself.

In use, the pill dispenser of the invention is first carefully charged with pills of the various types which are to be taken at certain times of each day for an entire week. It will be understood that in certain cases one or more of the compartments for each day may remain empty if pills are to be taken less often than four times a day. Pills may be loaded into the dispenser through the slot 1.3, or the cover 18 may be removed to facilitate loading. When charged with the prescribed pills, the cover is rotated to align the slot 18.3 with the "blank" pie sliced-shape section 14.5, whereupon the pill dispenser may be readily carried in the pocket or purse without fear of spilling pills. When the time has arrived for dispensing the pills within a given compartment, the cover 18 is rotated so that the slot is aligned with that compartment, and the pills are then removed through that slot. To a forgetful person, the presence of pills within a given compartment indicates that the pills corresponding to that day and that time have not been taken, whereas the absence of pills from a given compartment indicate that the pills have been taken.

The dispenser itself may range up to 3 1/2 inches in diameter, or more, and may be approximately 1 inch in

depth. With this size, the bottom of the pill dispenser, that is, the portion including the base plate 12 and the lower portion of the circumferential wall 16, may be grasped easily by one hand, and the cover 18 may be grasped by the other hand, making use of the serrated edge of the latter. In this manner, the dispenser can be operated even by those having physical conditions reducing manual exertion. The ease with which the cover 18 can be turned with respect to the rest of the dispenser can be governed by the tightness with which the cover is fastened to the center post 14 with the screw 20.

Manifestly, I have provided a pill dispenser which is capable of holding a week's supply of pills which may be taken up to four times per day and wherein more than one pill may be taken at a single time. My pill dispenser may be easily operated even by handicapped persons, and reduces the likelihood of serious accidents which could occur by one taking more or less than the prescribed number of pills at a given time. The pill dispenser of my invention may be easily and readily fabricated from thermoplastic materials using fairly simple mold designs, and is capable of reuse. Moreover, the indicia relating to time of the day at which pills are to be taken may be changed at will by the replacement of one indicium with another indicium.

While I have described a preferred embodiment of the present invention, it should be understood that various changes, adaptations, and modifications may be made therein without departing from the spirit of the invention and the scope of the appended claims.

What is claimed:

1. A pill dispenser for carrying a week's supply of pills to be dispensed at the rate of one or more pills several times a day, the dispenser comprising:

a cylindrical container including a circular bottom plate with a central upright mounting post and a circumferential wall rising from the periphery of the base plate and having an upper, horizontally extending flange, 29 spaced, stationary, upright divider walls disposed radially between the mounting post and circumferential wall and dividing the container into 28 pill-receiving compartments and a compartment-size blank segment, the compartments having internal volumes of at least 0.15 cubic inches, the horizontal flange bearing the names of sequential days of the week opposite each sequential group of four compartments and viewable from above, the dispenser having a circular cover including means permitting the names of the sequential days to be viewed from above, the cover being rotatably connected at its center to the mounting post and having a periphery extending radially beyond the periphery of the horizontal flange, the cover having a slot positioned to sequentially overlie and permit sequential access to the compartments from above as the cover is rotated.

2. The pill dispenser of claim 1 wherein said horizontal flange extends inwardly of the periphery of the circumferential wall.

3. The pill dispenser of claim 1 wherein the horizontal flange extends outwardly of the periphery of the circumferential wall.

4. The pill dispenser of claim 1 wherein the upright mounting post is provided with an axial, pin-receiving hole open upwardly, and wherein the circular cover has a centrally positioned hole alignable with the hole of

7

the upright mounting post, the dispenser including a pin passing through the hole in the cover and into the hole in the mounting post for rotatably mounting the cover to the mounting post.

5. The pill dispenser of claim 1 wherein the horizontal flange has an upper surface with space opposite each of the four compartments in each group for writing a time of the day.

6. The pill dispenser of claim 1 wherein the horizontal flange opposite each of the four compartments in each group bears written indicia of a different time of day.

7. The pill dispenser of claim 1 wherein the base plate, mounting post and divider walls comprise a single molded unit.

8. The pill dispenser of claim 1 wherein the base plate, divider walls, mounting post, circumferential wall and horizontal flange comprise a single molded unit.

9. The pill dispenser of claim 1 in which the circular cover is transparent to permit written indicia on the upper surface of the flange to be read through the cover.

10. The pill dispenser of claim 4 in which the compartments have internal volumes of at least 0.22 cubic inches.

11. A pill dispenser for carrying a week's supply of pills to be dispensed at the rate of one or more pills several times a day, the dispenser comprising:

a cylindrical container including a circular base plate with a central, upright mounting post with an axial, threaded hole open upwardly and a circumferential wall rising from the periphery of the base plate, the circumferential wall terminating upwardly in a horizontal flange of slightly greater height than the mounting post, 29 stationary, upright divider walls disposed radially between the mounting post and circumferential wall and dividing the container into 28 identical pill-receiving compartments each having an internal volume of at least 0.15 cubic inches and a compartment-size blank segment, the horizontal flange bearing the names of sequential days of the week opposite each sequential group of four compartments, a transparent circular cover having a central hole aligned with the threaded hole in the

8

mounting post, and a mounting screw passing through the hole in the cover and threaded into the axial hole in the mounting post and having an expanded head bearing downwardly against the upper surface of the cover adjacent the periphery of its central hole, said screw urging the cover to bear downwardly against and slidably engage the upper surface of the horizontal flange, the cover being transparent and having a diameter greater than that of the horizontal flange and a serrated periphery and also having a slot positioned to overlie and permit retrieval of pills from one compartment at a time as the cover is rotated.

12. A pill dispenser for carrying a week's supply of pills to be dispensed at the rate of one or more pills several times a day, the dispenser comprising:

a cylindrical container including a circular bottom plate with a central, upright mounting post and a circumferential wall rising from the periphery of the base plate and having an upper, horizontally extending flange at a slightly greater height than the mounting post, 29 spaced, stationary, upright divider walls disposed radially between the mounting post and circumferential wall and dividing the container into 28 identical pill-receiving compartments and a compartment-size blank segment, the compartments having internal volumes of at least 0.15 cubic inches, the horizontal flange bearing the names of sequential days of the week opposite each sequential group of four compartments and viewable from above, the dispenser having a circular cover through which the names of days may be viewed and rotatably connected at its center to the mounting post to urge the cover downwardly into sliding engagement with the horizontal flange, the cover having a periphery extending radially beyond the periphery of the horizontal flange and having a slot positioned to sequentially overlie and permit sequential access to the compartments from above as the cover is rotated.

13. The pill dispenser of claim 12 wherein the base plate, divider walls, mounting post, circumferential wall and horizontal flange comprise a single molded unit.

\* \* \* \* \*

50

55

60

65