United States Patent [19]

Fisher et al.

[11] **3,876,269**

[45] **Apr. 8, 1975**

[54] **PREPROGRAMMED MEDICATION DISPENSER**

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[22] Filed: **Apr. 23, 1973**

[21] Appl. No.: **353,694**

[52] **U.S. Cl.** **312/234.1**; 206/42

[51] **Int. Cl.** **A47b 81/00**; B42f 21/00

[58] **Field of Search** 312/234.1; 116/121; 206/42; 220/20

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Primary Examiner—Paul R. Gilliam

[57] **ABSTRACT**

A preprogrammed medication dispenser in which a plurality of chambers are provided in a single dispenser with one chamber being provided for each dosage of medication that is to be taken each time the medication is to be taken. The chambers are closed to retain the medication in the dispenser until the predetermined point in time at which the medications are to be dispensed arrives. Access is then provided to the medications so that all of the individual dosages that are to be dispensed at one point in time are exposed simultaneously.

2 Claims, 10 Drawing Figures

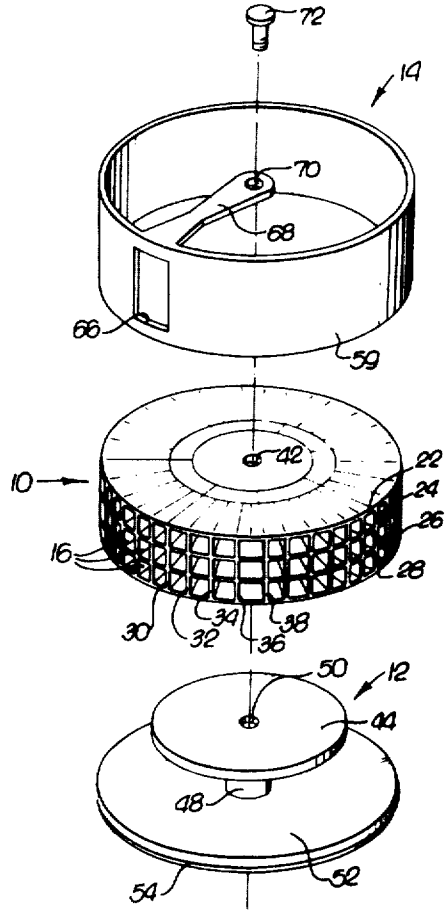


FIG. 1.

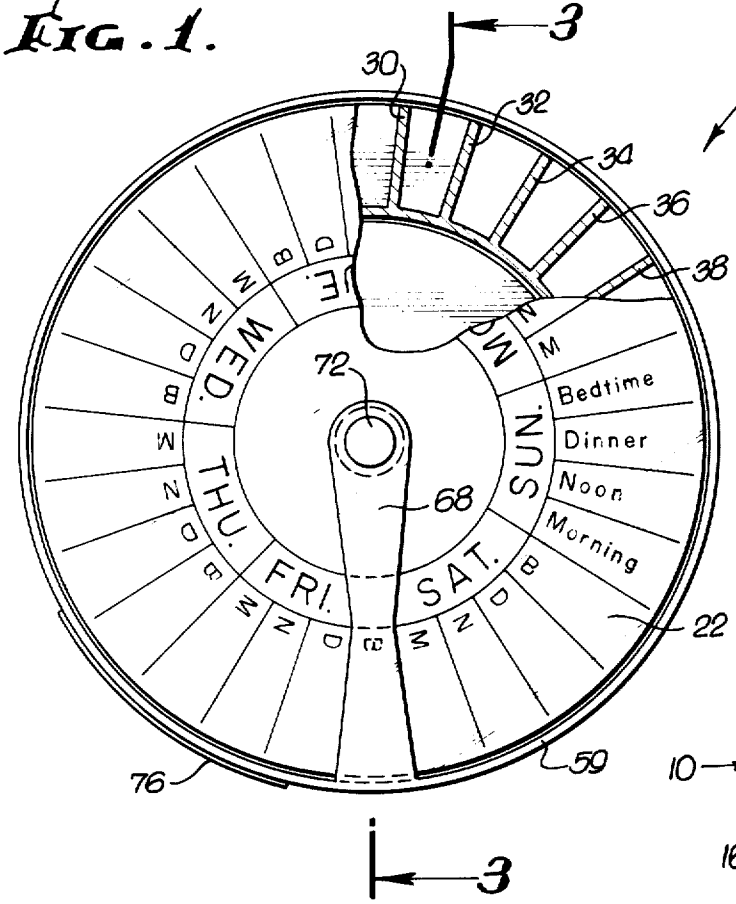


FIG. 5.

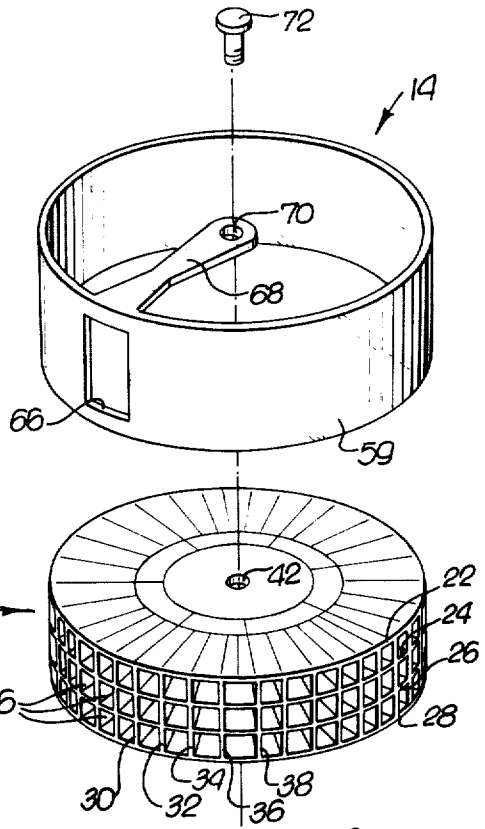
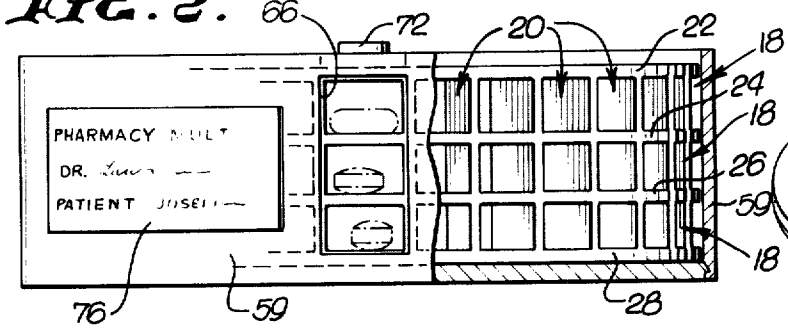


FIG. 2.



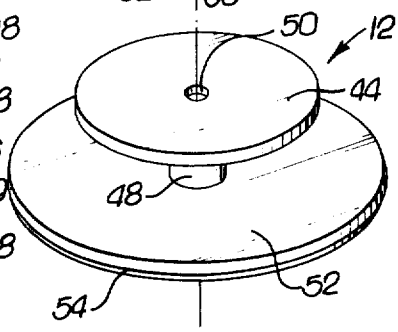


FIG. 3.

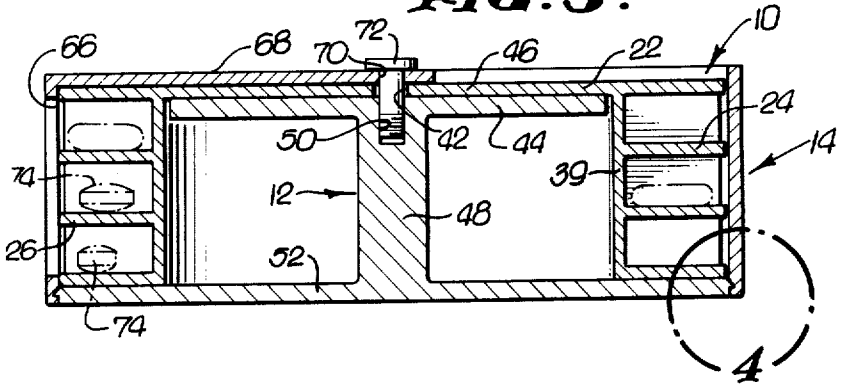


FIG. 4.

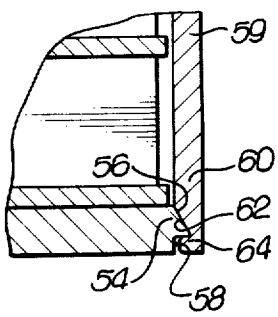


FIG. 6.

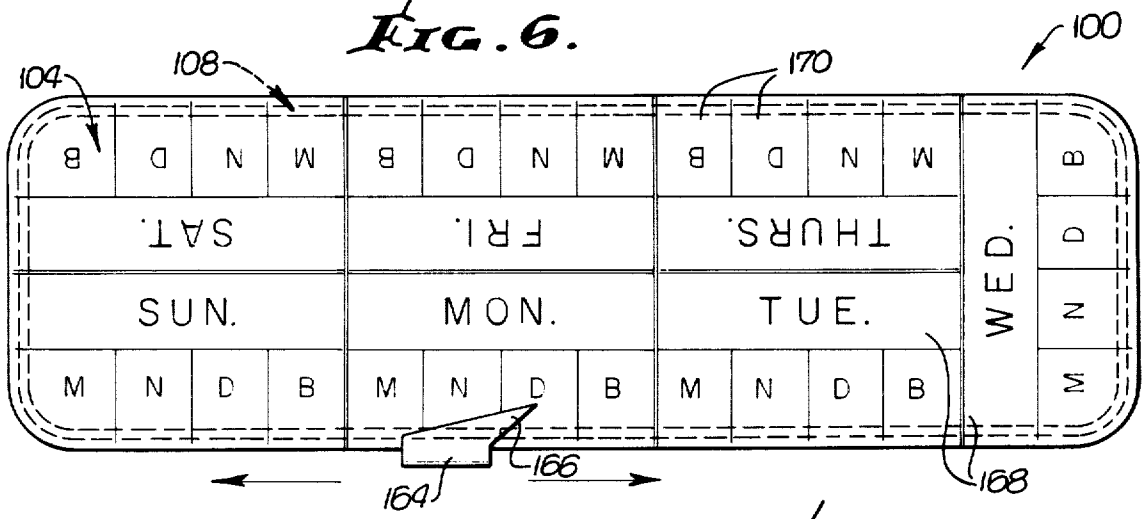


FIG. 7.

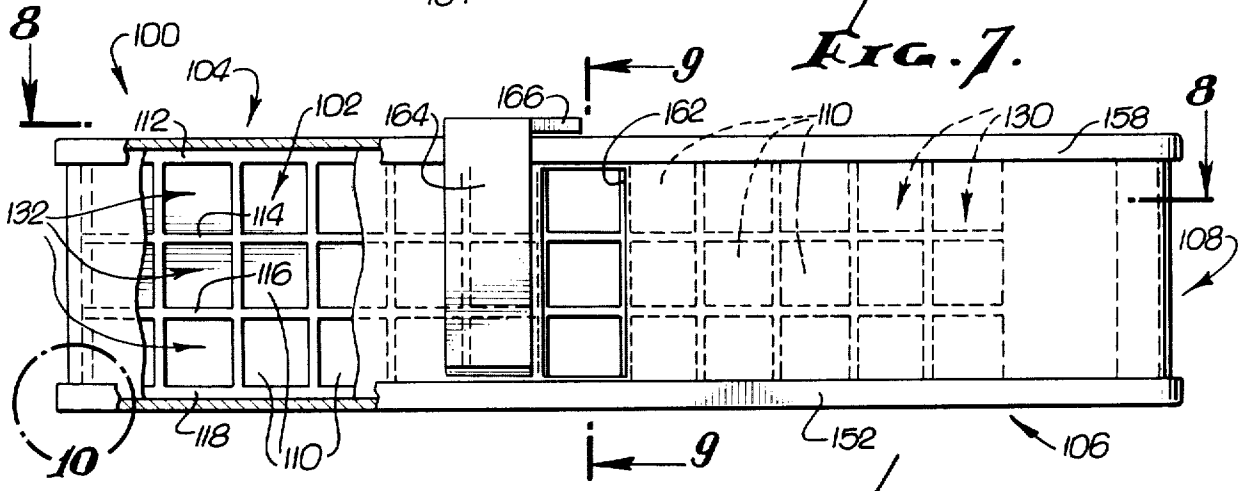


FIG. 8.

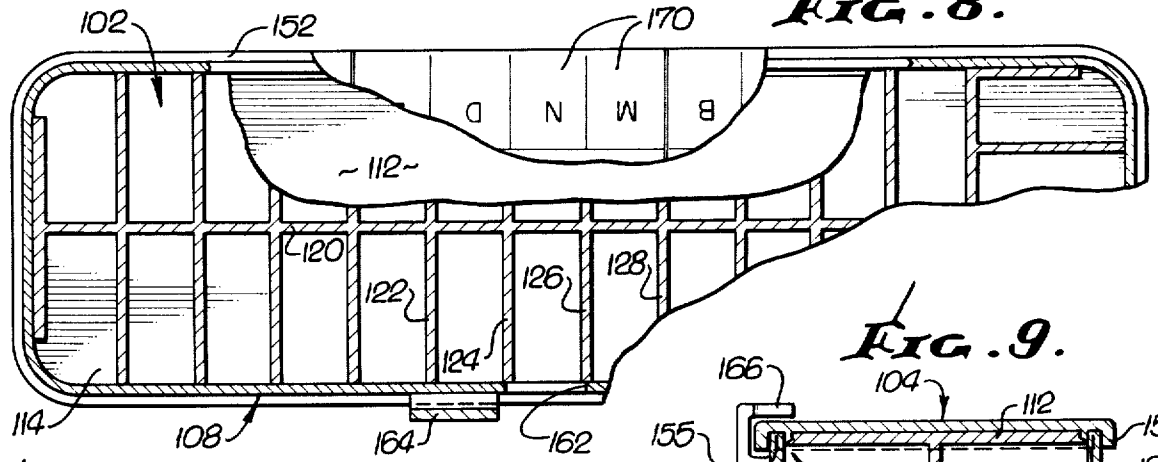


FIG. 9.

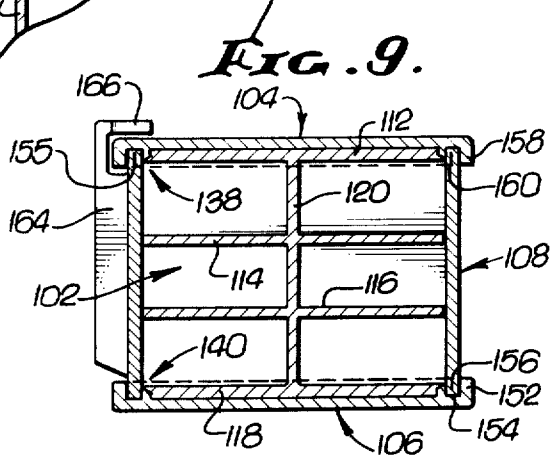
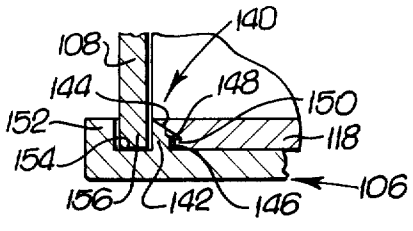


FIG. 10.



PREPROGRAMMED MEDICATION DISPENSER

The present invention relates to medication dispensers, and more particularly, the present invention relates to a medication dispenser in which a plurality of different medications are contained and the dispenser is preprogrammed to dispense the proper dosages at the proper times. A visual indication is provided to indicate whether the medication has been dispense as prescribed.

In general, current practice in dispensing prescriptions is to place a plurality of dosages of each type of medication in a separate independent container. When a person is required to take a plurality of medications during the course of any given day, the person receives a plurality of medication containers, each of which contains a plurality of dosages. For example, a physician may prescribe several medications for one person so that one medication is to be taken three times a day; a second medication is to be taken twice a day; and a third medication is to be taken four times a day. For a person in ill health, it is often difficult to keep track of the various dosages and the times at which they are to be taken.

According to the present invention, a preprogrammed medication dispenser is provided in which all of the medications to be taken by a patient are contained in one dispenser. An individual compartment is provided for each single dosage of medication, and access to these compartments is provided so that all of the medications that are to be taken at one time are exposed at one time. No medications other than those that are to be taken at the particular point in time are exposed. By making at least the wall adjacent to the access opening transparent, it is possible to provide a visual indication of which medications have been dispensed, if such an indication is desired.

The preprogrammed medication dispenser, according to the present invention, saves time and avoids error in hospitals where nurses will find all of the medications for one patient collected together in one place. The medication dispenser is filled at the pharmacy by a pharmacist or other responsible person under controlled conditions so that the chances for error are much less. Accounting time and error are also minimized through the use of the present invention.

In the drawings there is illustrated:

FIG. **1**, a partially broken plan view of a preferred embodiment of the preprogrammed medication dispenser;

FIG. **2**, a broken elevational view of the preprogrammed medication dispenser of FIG. **1**;

FIG. **3**, a sectional elevational view taken along line **3—3** of FIG. **1**;

FIG. **4**, a partial sectional view of area **4** in FIG. **3**;

FIG. **5**, an exploded perspective view of the preprogrammed medication dispenser of FIG. **1**;

FIG. **6**, a plan view of a further embodiment of a preprogrammed medication dispenser;

FIG. **7**, a broken elevational view of the preprogrammed medication dispenser of FIG. **6**;

FIG. **8**, a partial sectional view taken along line **8—8** in FIG. **7**;

FIG. **9**, a side elevational view taken along line **9—9** of FIG. **7**; and

FIG. **10**, a broken cross-sectional view of area **10** in FIG. **7**.

Referring particularly to FIGS. **1** through **5**, there is illustrated a preprogrammed medication dispenser indicated generally at **1**. Preprogrammed medication dispenser **1** is composed of a cylindrical magazine indicated generally at **10**, which is confined in a housing constructed of a housing member indicated generally at **12** and a wall member indicated generally at **14**.

Cylindrical magazine **10** includes a plurality of radially opening compartments indicated, for example, at **16**. The radially opening compartments **16** are closed except for their radially outermost ends which are open. Radially opening compartments **16** are arranged in rows indicated generally at **18** and columns indicated generally at **20**. Rows **18** and columns **20** are defined by annular divider walls **22, 24, 26,** and **28,** respectively, and radially extending divider walls, for example, **30, 32, 34, 36,** and **38,** respectively. The radially innermost wall of the radially opening compartments **16** is provided by an annular upright wall **39.**

The outermost surface of the disc-shaped annular divider wall **22** is provided with a plurality of indicating indicia. The markings associated with these indicia divide the upper surface of annular divider wall **22** into seven sections, one for each day of the week. Each section, or day of the week, is divided into four subsections; namely, bedtime, dinner, noon, and morning. The markings are such that each of the subsections is adapted to register with one of the columns indicated generally at **20.** The outer annular divider wall **22** is provided with an axial opening **42.**

The housing member indicated generally at **12** consists of a table **44,** which has an upper planar surface **46.** The innermost surface of annular divider wall **22** is adapted to rest rotatably upon upper planar surface **46.** Upper planar surface **46** is supported in position by pedestal **48.** Pedestal **48** is provided with a threaded axial hole **50.** The remote end of pedestal **48** is affixed axially to circular base **52.** The radially outermost peripheral edge **54** of base **52** is provided at its outermost surface with a beveled surface **56** and a step **58.** Step **58** is located at the axially outermost peripheral edge of base **52.**

Wall member **14** includes cylindrical wall **59,** one edge **60** of which is provided with a beveled radially inner edge surface **62** and a shoulder **64.** Beveled radially inner edge surface **62** cooperates with beveled radially outermost edge surface **56,** and shoulder **64** cooperates with step **58** to form a self-locking joint when housing member **12** is pressed axially into engagement with wall member **14.** Cylindrical wall **59** is provided with access window **66.** Access window **66** extends through cylindrical wall **59** and is adapted to register with one of the columns **20** of radially opening compartments **16** to provide access to the interiors of the compartments in a given column, as depicted, for example, in FIG. **2.** The other edge of cylindrical wall **59,** which is remote from one edge **60,** is provided with a projection **68.** Projection **68** extends radially inwardly from the other edge of cylindrical wall **59** to the access of the cylinder defined by the cylindrical wall **59.** Projection **68** is provided with an axial bore **70.** Axial bore **70,** axial opening **42,** and threaded axial hole **50** are adapted to be aligned together and secured in registration with one another by means of screw **72,** as indicated, for example, in FIG. **3.** Screw **72** and the self-locking joint formed by peripheral edge **54** and one edge **60** serve to hold preprogrammed medication dis-

penser 1 together in cooperative relationship so that when projection 68 is located, as shown in FIG. 1, over a particular indicia, access window 66 is aligned with the open ends of compartment 16 so as to permit the different medications 74 exposed in the column of compartments to be extracted from preprogrammed medication dispenser 1. A prescription label 76 is affixed to the outer surface of cylindrical wall 59, according to conventional procedures.

Cylindrical wall 59 may be transparent, if desired. Making the entire wall 59 transparent permits a rapid visual check of the medication dosages contained therein; however, if it is only deemed necessary to check those medication dosages immediately adjacent in time to the present, only the area of wall 59, which is adjacent access window 66, need be made transparent.

Referring particularly to FIGS. 6 through 10, there is illustrated a preprogrammed medication dispenser indicated generally at 100. Preprogrammed medication dispenser 100 is constructed of a generally rectangular magazine indicated at 102, which is confined within a cage defined by a first cover indicated generally at 104, a second cover indicated generally at 106, and a wall indicated generally at 108.

The generally rectangular magazine 102 includes a plurality of compartments indicated, for example, at 110. The compartments 110 are defined by lateral walls 112, 114, 116, and 118, respectively, upright divider wall 120, and upright partition walls indicated, for example, at 122, 124, 126, and 128, respectively. The compartments 110 are arranged in columns indicated, for example, at 130 and in rows indicated at 132. The cage is constructed by bringing together the cage structure with the generally rectangular magazine 102 so that self-locking flanges indicated at 138 and 140, respectively, engage with one another. A typical self-locking flange is indicated, for example, at 140 in FIG. 10. Self-locking flange 140 is composed of a shoulder 142, which projects generally upwardly from the second cover 106 adjacent to, but spaced from the outer edge thereof. Shoulder 142 is provided at its outer end with an inwardly facing sloping surface 144 and adjacent to the inwardly facing surface of second cover 106 with an undercut groove 146. The outer edge of lateral wall 118 is provided with an outwardly facing sloping surface 148 which is adapted to seat with inwardly facing sloping surface 144. Tongue 150 projects from the outer edge of lateral wall 118 at such a location that it coacts with and is received in groove 148, thus locking lateral wall 118 and second cover 106 together. The same self-locking structure is provided between first cover 104 and lateral wall 112. The outer periphery of second cover 106 is provided with a ridge 152 which projects generally upwardly from the inwardly facing surface of second cover 106. Ridge 152 is spaced outwardly from shoulder 142 so as to define therebetween a channel 154. Channel 154 opens generally inwardly. A similar ridge 158 is provided on first cover 104, spaced from a shoulder so as to define therebetween a channel 155 which opens generally inwardly. Wall 108 has a first edge 156 and a second edge 160. First edge 156 is received in channel 154, and second edge 160 is received in channel 155. Channels 154 and 155 serve as tracks in which wall 108 is slidably received. The outwardly facing sides of compartments 110 are closed by wall 108 except where opening 162 is provided. Opening 162 provides access to an entire column 130 of compartments 110 simultaneously. A handle 164 is affixed to wall 108 at a location adjacent opening 162. Opening 162 may be transported from one column of compartments 110 to another, as desired, by grasping handle 164 and moving it laterally so that wall 108 is caused to slide laterally in channels 154 and 155. An indicator 166 is attached to wall 108 adjacent to and in alignment with opening 162. The outwardly facing surface of first cover 104 is provided with section indicating indicia 168 and subsection indicating indicia 170. Section indicating indicia 168 are provided for each day of the week, and subsection indicating indicia 170 are provided within each section to indicate the particular point in time during the day when medication is to be dispensed. Indicator 166 points to the particular subsection indicating indicia which is exposed through opening 162. For example, in FIG. 6, indicator 166 is pointing to the Monday section and the dinner subsection. This would indicate that the medication which is to be taken at dinnertime on Monday should now be dispensed.

The wall 108 is constructed of a flexible material so that it will follow around the outer periphery of generally rectangular magazine 102, as it is guided by its first and second edges through channels 154 and 155.

The material from which the preprogrammed medication dispensers of this invention are constructed is generally sufficiently resilient to permit the structures to flex so as to accommodate the self-locking devices. Various known synthetic polymeric materials; such as, polyethylene, polypropylene, and the like, may be utilized.

The devices depicted in the drawings are constructed so that a full seven days of medication may be accommodated with three different medications being dispensed four times a day. In this construction there are seven sections, each section corresponding to one day, four subsections corresponding to four points in time during the day, and three compartments in each subsection. Altogether there are 28 subsections and 84 separate individual compartments.

In general, the opening in the wall which closes the open ends of the individual compartments is arranged so that it provides access simultaneously to all of the compartments in a single subsection.

In the embodiment of FIGS. 1 through 5, the cylindrical magazine 10 is rotatably mounted so that it moves past the stationary access window 66. In the embodiment of FIGS. 6 through 10, the generally rectangular magazine 102 is stationary, and opening 162 moves past the open ends of the compartments 110 to effect relatively movement between the opening and the compartments.

What is claimed is:

1. A preprogrammed medication dispenser comprising:

a housing;

a magazine mounted in said housing, said magazine including a plurality of compartments, said compartments being distributed both circumferentially and axially of said magazine, the radially outermost sides of said compartments being open, said magazine including at least two sections, each said section corresponding to a day of the week, each of said sections including at least two subsections, each said subsection corresponding to one point in

time during one said day, each said subsection including at least two compartments, each of said compartments corresponding to a single dosage of medication that is to be dispensed at said one point in time;

a substantially transparent wall forming part of said housing, surrounding said magazine, and closing said outermost sides, said wall having an access window therein positioned so as to register with and permit simultaneous access only to all of the compartments in one said subsection at said one point in time;

means for providing relative movement between said access window and said compartments permitting selective access to said compartments through said access window; and

indicia means associated with said compartments for indicating the points in time at which access should be had to each of said compartments.

2. A preprogrammed medication dispenser of claim 1 wherein each of said subsections includes three said compartments, each of said sections includes four subsections and said magazine includes seven of said sections, the said compartments in each said subsection being distributed axially of said magazine.

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