ABSTRACT

A closure for a pill dispenser having a child resistant locking system comprising a cap and a container. The cap is mark or label in order to provide a drug regimen and the container has a pointer or an indicator which is aligned with at least one of the cap marks in order to indicate the next dose as part of a compliance feature. The pharmaceutical package not just provides compliance, child-resistant and senior friendly packaging but also a low cost and easy to use package.
Fig. 9
PRIOR ART

Fig. 10
PRIOR ART
BOTTLE-CLOSURE HAVING A COMPLIANT, CHILD RESISTANT AND SENIOR FRIENDLY PACKAGING

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT

[0001] N/A

RELATED APPLICATIONS

[0002] N/A

BACKGROUND OF THE INVENTION

[0003] 1. Field of the Invention

This invention relates to the packaging of pharmaceutical compositions, and particularly a low cost bottle-closure having compliance, child resistant and senior friendly packaging.

[0004] 2. Discussion of the Background

Since 1973, the Consumer Product Safety Commission (CPSC) has been the agency that administers and enforces the Poison Prevention Packaging Act (PPPA) and its regulations. In 1974 a child resistant packaging regulation for certain prescription drugs went into effect (16 CFR part 1700.14(a)). That regulation, 16 CFR section 1700.14(a) (10), requires that all prescription drugs intended for oral administration in humans comply with the child-resistant packaging requirements unless specifically exempted. According to PPPA child resistant packaging is special packaging “designed or constructed to be significantly difficult for children under 5 years of age to open or obtain a toxic or harmful amount of the substance contained therein within a reasonable time and not difficult for normal adults to use properly, but does not mean packaging which all children cannot open or obtain a toxic or harmful amount within a reasonable time.”

[0005] Several packages are designed to address qualities that seniors have but children do not; like reading comprehension, ability to follow a multi-step process, and to a lesser extent. However, now days not just having a child-resistance and senior friendly (CR/SF) packages is enough, other important features such as compliance are needed as part of the pharmaceutical package. Compliance features in a package helps the patient to comply with the medication regimen. These features are usually achieved by adding drug regimen information on the package. The inclusion of a seven-day calendar to document the patient’s starting date, along with four calendar reminder stickers to mark the initial and subsequent closing dates are examples of compliance features.

[0006] Most of the attempts to achieve compliance in a bottle are by adding information to it structure. Examples of child resistant-senior friendly bottles that are compliant are: Med-time from Owen Ill., Virtual Hinge Dispenser from VH technologies, and Last Dose Indicator from Ken Hoffman Enterprises.

[0007] Med-time from Owen Ill., as show in FIG. 10, is a 2-piece push down and turn continuous thread cap called Med Time by its manufacturer Owens Ill. The Med Time bottle closure has an indexing mechanism wherein every time you close the bottle, the closure advances to the next time you need to take your dose. Med Time provides a compliant, child-resistant and senior friendly packaging but because of the complexity of said bottle-closure the cost per closure is of 25 cents.

[0008] The FIG. 9 shows another bottle closure called the Virtual Hinge Dispenser by its inventor, Anna Freed, from VH Technologies comprising a 1-piece snap-on cap. The attached lid in the Virtual Hinge Dispenser cannot be misplaced or dropped; it can be opened with one hand. The dispenser also automates changes to the drug or the dose. The Virtual Hinge Dispenser, just like Med Times provides a compliant, child-resistant and senior friendly packaging with a price per closure of 15 cents. The cap itself is less complex than the Med Time but as indicated above it is really easy to open or can be dropped.

[0009] The Last Dose Indicator from Ken Hoffman Enterprises in another compliant CR/SF bottle and cap system. The Last Dose Indicator is a container that allows the patient to turn an indicator ring to remind him or her when the last dose of medication was taken, but it also accommodates a change in regimen. For example, if a three-a-day regimen is changed to two a day, all the patient has to do is use one fewer slot under each day of the week on the indicator. There is a potential difficulty for the person indicating the last dose because of the effort looking the vertical lines.

SUMMARY OF THE INVENTION

[0010] The closure for a pill dispenser of the present invention comprises a closure having a child resistant locking system comprising a cap mark or label and a container connected to said cap having a pointer or a single indicator which is aligned with at least one of the cap marks in order to indicate the next time of the dose as part of the compliance feature. The pharmaceutical package not just provides compliance, child-resistant and senior friendly packaging but also a low cost and easy to use package.

[0011] The cap has a locking system comprising a simple 1-piece push down and turns lug style cap which is label or mark with days, number, hours or any other drug regimen. The container is provided with projections extending outwardly at the open end adapted to interlock with the cap lugs. Also said container has an indicator, a single mark or label, wherein said mark or label is designed in such a way that when the user properly close the pill dispenser said cap is aligned with the indicator showing when to take the next dose. The use of a locking system such as the lug style cap in combination with the container’s indicator provides a simple and easy assembly pharmaceutical package for compliance. Further the costs compare to the Med Time closure and Virtual Hinge is reduced.

[0012] Another object is to provide a pill dispenser of a low cost closure having compliance, child-resistant and senior friendly packaging use by people with sight problem.

[0013] The number of lugs and projections are related but do not have to be the same. Also the number of marks at the cap can be, but not necessarily, directly related to the number of lugs. The marks at the cap and the container can be externally added or one piece with the structure.

[0014] The invention itself, both as to its configuration and its mode of operation will be best understood, and additional objects and advantages thereof will become apparent, by the following detailed description of a preferred embodiment taken in conjunction with the accompanying drawings.

[0015] When the word “invention” is used in this specification, the word “invention” includes “inventions”, that is, the plural of “invention”. By stating “invention”, the Applicant does not in any way admit that the present application does not include more the one patentable and non-obviously dis-
tinct invention and Applicant maintains that the present application may include more than one patentably and non-obviously distinct invention. The Applicant hereby asserts, that the disclosure of the present application may include more than one invention, and, in the event that there is more than one invention, that these inventions may be patentable and non-obvious one with respect to the other.

Further, the purpose of the accompanying abstract is to enable the U.S. Patent and Trademark Office and the public generally, and especially the scientists, engineers, and practitioners in the art who are not familiar with patent or legal terms or phraseology, to determine quickly from a cursory inspection the nature and essence of the technical disclosure of the application. The abstract is neither intended to define the invention of the application, which is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view of the pill dispenser. Fig. 2 is a perspective view of the container. Fig. 3 is an illustration of the cap positions during the closing of the pill dispenser. Fig. 4 is a perspective view of the cap having the labels. Fig. 5 is a detail view of bottom view of Fig. 4. Fig. 6 is a perspective view of the cap with integrated marks. Fig. 7 is a view of another embodiment of the pill dispenser. Fig. 8 is a view showing a second arrangement between the lugs and the locking members. Fig. 9 is a view showing a conventional snap-on cap. Fig. 10 is a view showing a conventional 2-piece push down and turn continuous thread cap.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A pill dispenser 1 and a bottle closure 2 is generally show by Fig. 1 to 5. The first embodiment of the present invention shows a cap 2 receiving at the open mouth of the container 3. The cap 2 comprises an inner 2a and outer wall 2b wherein the cap’s outer wall 2b has marks or labels 4 as part of the compliance feature. The marks or labels 4 show the drug regimen to be followed by the user. The marks 4 presented in FIGS. 1, 3-4 and 6 show the days of the week; however it can be hours, weeks or symbols representing any other drug regimen. Any mark or label can be use such as a stamp displaying the drug regimen or projections integrated with the cap outer wall 2b in order to be identified by people with sight problems using the tact. The outer wall 2b has protrusions 2c between the marks 4 providing a better grip for the user. A cap’s inner wall 2a has a plurality of lugs 5 extending inward and having a particular equal distance between each other which is related to the quantity of marks at the outer wall. FIG. 5 shows that the number of lugs 5 is seven which is equal to the week’s days. It is important to note that even when the number of lugs is seven it can vary and that the amount of marks is limited by the amount of locking members 6 and/or lugs 5.

The container 3, as shown in FIG. 2, has a cylindrical shape having a locking member 6 adjacent to the container’s open mouth end. The locking member 6 comprises a projection extending outwardly from the main body of the container 3. The locking member is provided with a tapered portion 6a for guiding the lugs 5 into the retaining recess 6b. The locking members 6 are around the container’s open mouth and the distance between the locking members 6 may vary depending on the drug regimen and/or the combination use with the lugs. For example in the instant the quantity of locking member 6 is equal to the marks 4 and lugs 5.

The container 3 is provided with an indicator or pointer 7 which is located below the locking member 6 as shown in FIG. 2. The indicator or pointer 7 can be a stamp with a display showing an arrow pointing toward the cap next to a “Next Dose” note 8. Any other pointer or indicator can be used such as a red line or a projection integrated with the container main body in order to be identified by people with sight problems using the tact.

In order to use the present invention compliance feature of the pill dispenser the user has to properly close the container. The FIG. 3 shows three steps (A,B,C) to follow in order to properly close the pill dispenser. The first step is to select the mark or label 4 to be use for the reminder of the next dose. If the user select Saturday, as shown in FIG. 3, for the next day to take the next dose the cap 2 has to be aligned in such way that the closest lug 5 at the mark’s left side located at the inner wall 2a has to be positioned between at least two locking members 6. At the same time the indicator 7 has to be between at least side two locking members 6. The second step is to push and turn the cap clockwise. The lugs 5 are positioned in the receiving recess 6b in such way that the cap 2 is fixed to the container’s 3 open mouth end. The clockwise turn also aligned the mark 4 with the indicator 7 in order to display when the next dose is needed.

It is important to note that the quantity of marks at the cap is limited by whoever has the biggest number between the lugs 5 and the locking members 6. For example, as shown in FIG. 8, if the quantity of marks is twelve the quantity of lugs can be four but the quantity of locking member has to be twelve or vice versa. The use of less lugs or locking members reduces even more the cost since less material is being use.

The invention is not limited to the precise configuration described above. For example, as show in FIG. 7, the marks or labels 4 can be located at the container and the indicator or pointer at the cap 2. While the invention has been described as having a preferred design, it is understood that many changes, modifications, variations and other uses and applications of the subject invention will, however, become apparent to those skilled in the art without materially departing from the novel teachings and advantages of this invention after considering this specific together with the accompanying drawings. Accordingly, all such changes, modifications, variations and other uses and applications which do not depart from the spirit and scope of the invention are deemed to be covered by this invention as defined in the following claims and their legal equivalents. In the claims, means-plus-function clauses, if any, are intended to cover the structures described herein as performing the recited function and not only structural equivalents but also equivalent structures.

All of the patents, patent applications, and publications recited herein, and in the Declaration attached hereto, if any, are hereby incorporated by reference as if set forth in their entirety herein. All, or substantially all, the components disclosed in such patents may be used in the embodiments of the present invention, as well as equivalents thereof. The details in the patents, patent applications, and publications
incorporated by reference herein may be considered to be incorporable at applicant’s option, into the claims during prosecution as further limitations in the claims to patentable distinguish any amended claims from any applied prior art.

1. A bottle-closure use in a pill dispenser comprising: a one piece cap having an inner and outer wall, wherein said outer wall is label or mark depending on a drug regimen and said inner wall has lugs, a container having an open mouth end over which said cap receives, an indicator or pointer adjacent to said open mouth, and a plurality of locking members comprising a projection extending outwardly for receiving and fixing said cap’s lugs, wherein said locking members are positioned between said container’s open mouth and said indicator, and wherein said mark or label is aligned with the indicator showing when to take next dose when the user properly close the pill dispenser.

2. A bottle-closure in accordance with claim 1, wherein said mark or label is integrated with the cap.

3. A bottle-closure in accordance with claim 1, wherein between said marks or labels a set of protrusions are positioned for a better grip of the cap.

4. A bottle-closure in accordance with claim 1, wherein said marks or labels are made as a one piece with the cap outer wall.

5. A bottle-closure in accordance with claim 4, wherein said marks or labels protrude from the container.

6. A bottle-closure in accordance with claim 1, wherein said indicator or pointer are made as a one piece with the container.

7. A bottle-closure in accordance with claim 6, wherein said indicator protrudes from the container.

8. A bottle-closure in accordance with claim 1, wherein said indicator or pointer are made as a one piece with the container and protrude from the container, and wherein said marks or labels are made as a one piece with the cap outer wall and protrudes from the cap outer wall.

9. A bottle-closure in accordance with claim 1, wherein the quantity of lugs is less than the quantity of locking members.

10. A bottle-closure in accordance with claim 1, wherein the quantity of locking is less than the quantity of lugs is a selection of days, weeks or numbers.

11. A bottle-closure in accordance with claim 1, wherein the drug regimen is a selection of days, weeks, numbers or symbols.

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