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ADJUSTABLE DISPENSING PACKAGE

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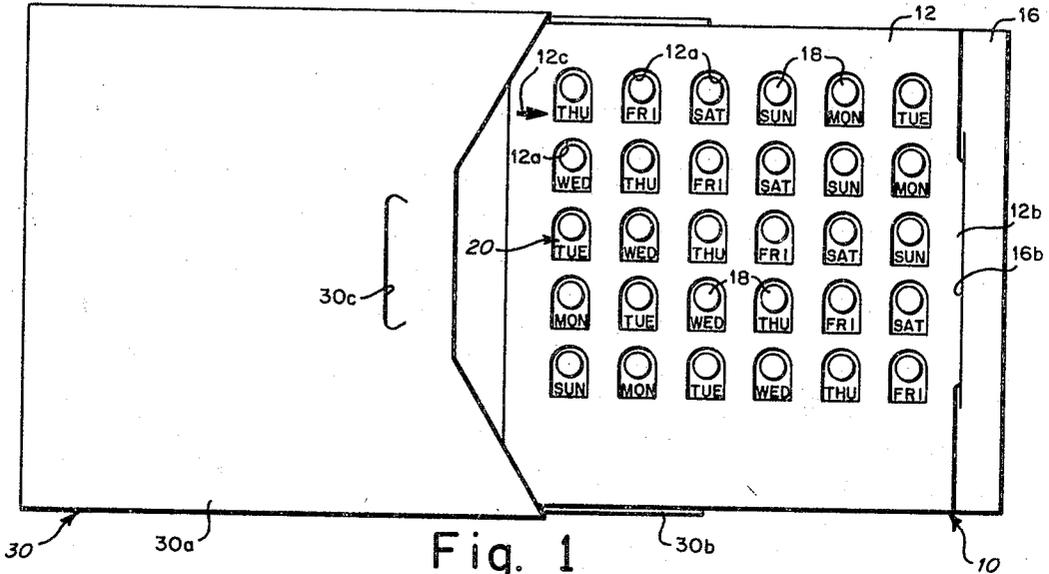


Fig. 1

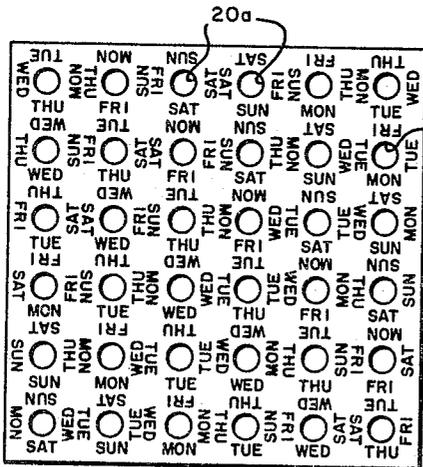


Fig. 2a

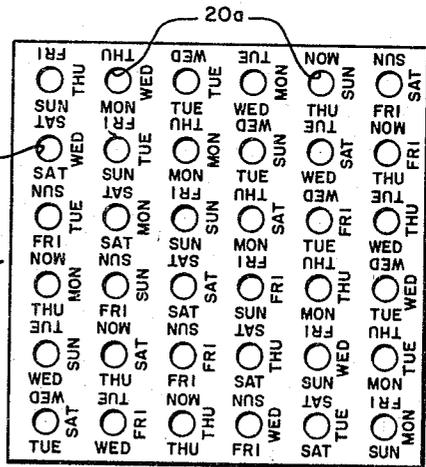


Fig. 2b

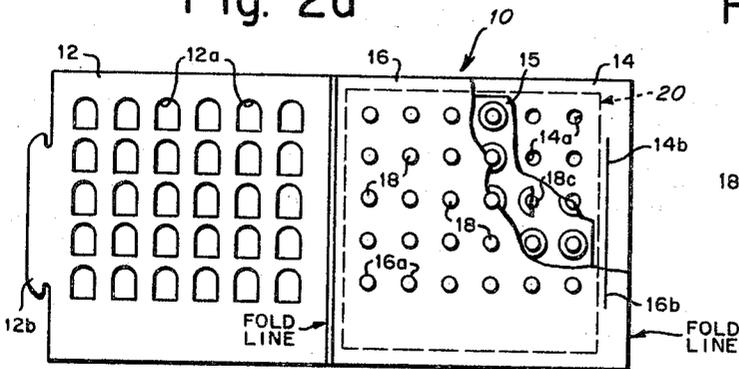


Fig. 3

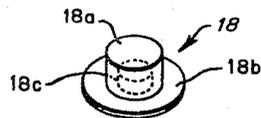


Fig. 4

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ADJUSTABLE DISPENSING PACKAGE

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This invention relates to a package. More particularly, it relates to a package which also dispenses. More particularly, it relates to an adjustable dispensing package.

The invention more specifically concerns a package which contains a plurality of small items, wherein it is desired to dispense these items at predetermined intervals of time from the package. The particular field of obvious application of this invention lies in a package for holding and dispensing a plurality of small medicinal preparations in the nature of pills, tablets, capsules, or in similar forms. In this patent, the word "tablet" is used to broadly include all the various designations of items which may obviously be packaged and dispensed in accord with this invention.

An important field for this invention lies in the provision of fertility suppressive tablets. Such tablets must be used in accord with certain requirements. Typically, these requirements include the following: One tablet must be taken each day; the nature of the tablet taken on any given day during a given menstrual cycle must be predetermined. For example, a set of 30 tablets may be supplied for one menstrual cycle. The user must take, on successive days, eight tablets of one type, then ten tablets of another type, then five tablets of another type, and then five tablets of a last type. It is necessary that the changeover from one type of tablet to another take place with exact relationship to some critical time in the menstrual cycle. Therefore, if the tablets are arranged in serial form in a package for individual dispensing, it is necessary that the user know when and where to start the order of successive daily dispensing and taking of the tablets.

It is an object of this invention to provide a package.

It is an object of this invention to provide an adjustable dispensing package.

It is an object of this invention to provide a package containing a plurality of individually dispensable small items, and adjustable means to indicate at what point in a given time cycle, each item should be dispensed.

It is yet another object of this invention to provide a package for containing individually dispensable fertility suppressive tablets, and an adjustable insert selectively displaying a given day adjacent to each said tablet.

Other aims and objects of this invention are made apparent in the following specification and claims.

The invention is best understood in connection with the accompanying drawings in which like reference numerals refer to like parts and in which:

FIGURE 1 is a plan view of the front of the package partly inserted in its envelope;

FIGURE 2a is a plan view of the obverse side of the day insert;

FIGURE 2b is a plan view of the reverse side of the day insert;

FIGURE 3 is a plan view of the front of the package in its open position, showing partially fragmented levels; and

FIGURE 4 is a perspective view of a tablet and its containing cap.

The preferred and typical form of the invention is illustrated and is described in detail first.

In FIGURE 1 the adjustable dispensing package generally designated 10 is shown partly inserted in an en-

velope 30. The envelope 30, made of flexible sheet material, generally cardboard, comprises an envelope body 30a and a closure tab 30b. The closure tab 30b is partly hidden behind the partially inserted package 10. A slot 30c is provided on the envelope of body 30a to receive a projection (not shown) projecting to the right from closure tab 30b. The envelope 30 is not of the essence of this invention, and is included here merely to show a complete typical form.

The user, having opened the envelope 30 and withdrawn the package 10, views it as shown in FIGURE 1. The user sees a front panel 12 which is provided with a plurality of windows 12a. In this preferred embodiment, there are 30 such windows. Through each window is visible a cap 18 which is more particularly described elsewhere in the application. Each cap contains a tablet. Also visible through each window 12a is part of the insert, generally designated 20. The insert has imprinted thereon a plurality of time-identifying marks. In this preferred embodiment, these marks consist of the names of the days of the week. As shown in FIGURE 1, the insert shows the name of a successive day of the week corresponding to each successive window and cap, and visible through each window adjacent to the cap seen through the window. An indexing mark 12c is provided on the front panel and points to the first window. In this preferred embodiment, the indexing mark 12c is an arrow, and it points to the window in the upper left corner, which is identified as Thursday.

Thus, set or adjusted, the user knows that the first pill, that is the one nearest the arrow 12c, should be taken on the next succeeding Thursday. That tablet having been duly taken, the following day, a pill is available in a window identified as Friday. Thus, each tablet is presented in order for the corresponding day of the week. It is an important aspect of this invention that the package may be prepared so that any one of the days of the week may be presented in the window marked by the arrow. This day having been chosen, each succeeding window displays the serially succeeding days of the week for an extended time, in this preferred form, 30 days. The means by which the selected day is displayed in the first window is described elsewhere in this patent.

It is apparent that with this means available, a medical doctor, for example, has a choice of seven different days at which to start the successive taking of the tablets. The doctor can, thus, adjust the package, give necessary instructions, and give it to the user.

The structure of the insert 20 is best shown in FIGURE 2a and FIGURE 2b. It may comprise a sheet of thin material, typically cardboard, and provided with a plurality of insert apertures 20a. These apertures are of such size and spacing so as to register with and accommodate each of the tablet caps provided elsewhere. The insert 20 is a square, and it will be appreciated that the obverse side can be placed over the tablet caps in any one of four possible orientations. Thus, if placed over the caps in the orientation shown in FIGURE 2a, the day "Thursday" would show in the first window. If insert 20 is rotated 90-degrees clockwise, the day "Wednesday" would appear in the first window. The word "Wednesday" just referred to is the word printed near the aperture 20a in the lower left corner of FIGURE 2a. In the same manner, a rotation of another 90-degrees brings the word "Tuesday" (near the lower right corner of FIGURE 2a) into the indexed or first window 12a. Thus, a choice of four days of the week is available by orienting the obverse side of insert 20.

The reverse side of insert 20, shown in FIGURE 2b, may also be oriented in any one of four ways, 90-degrees apart. Since only the names of seven days are required,

only three week-days are positioned around each aperture 20a on the reverse side, as contrasted to the four week-days around each aperture on the obverse side. It is also apparent from examining FIGURE 2a and FIGURE 2b that after the chosen day of the week is registered so as to appear in the index window, the successive days automatically follow in successive windows.

The insert 20 may be described as a square sheet having a plurality of apertures, each aperture having a plurality of time-identifying marks adjacent thereto. The insert is capable of orientation so that any edge is at the top and either side is front. The identifying marks are so imprinted so that a different set of successive identifying marks is readable in connection with its aperture with different combinations of top edge and front side.

Referring now to FIGURE 3, the package 10 is shown opened as for adjustment of the insert. The front panel 12 folds away on the fold line from inner back panel 16. Panel 16 is provided with a plurality of inner back panel apertures 16a to accommodate the caps 18. An outer back panel 14 is provided beneath the inner back panel 16, as shown in the fragmented view of FIGURE 3. Outer back panel 14 is also provided with a plurality of outer back panel apertures 14a which correspond to and register with apertures 16a.

Between panels 14 and 16 is sandwiched a rupturable sheet 15. This sheet 15 may typically be aluminum or other metal foil, plastic, paper, or other cellulose product. Panels 16 and 14 are affixed, as by an adhesive, on at least part of their opposed faces. A tablet cap 18 is provided over rupturable sheet 15 registered with each aperture 16a and 14a. The structure of each tablet cap 18 is best shown in FIGURE 4. The cap consists of a flange 18b and a raised center portion 18a. The tablet 18c is provided inside raised center portion 18a. The flange 18b is over the sheet 15, so that sheet 15 provides a retainer for the tablet 18c. Cup 18 is generally of a deformable transparent plastic.

In the embodiment shown, the user dispenses the tablet from the appropriate window by pressing on the top of cap 18. The cap deforms enough so as to rupture the sheet 15 at the corresponding aperture. The tablet 18c then falls out.

In FIGURE 3, the package is shown open so that the time marker insert 20 may be properly oriented and registered. Insert 20 is shown in phantom lines in FIGURE 3. After orientation and registration, front panel 12 is folded up around the fold line, and its lock tab 12b is inserted through slot 14b, 16b, which extends through both back panels 14 and 16. After this operation, the package appears as shown in FIGURE 1.

This invention need not be limited to the concept of dispensing by forcing a tablet through a rupturable sheet, which is here described as illustrative only. It is apparent that every combination of top edge and front surface need be utilized. In fact, in the illustrated embodiment, there are eight such possible combinations, but only seven are utilized. It is not essential that the time-identifying markings refer to days of the week; for other applications they may refer to other time names, such as months, hours, etc.

The square shape of the day insert 20 is of unique value. It permits the provision of orderly rows and ranks of tablets to which the insert may be fitted in any orientation. It is apparent, however, that a provision of an insert with any plurality of equal sides provides the opportunity for the general application of the broad principle of the invention. Thus, a five equal-sided insert could be provided. There would be five time markings around each aperture, each time marking being so placed that depending upon the orientation (of five possible orientations for each side), one and only one time marking would show in each window.

The openings designated as "windows" in this patent, of course, can vary in their configuration within the scope of the invention. Unless otherwise specified, suitable ma-

terials for the elements of this invention are cardboard, although the applicability of the invention is not limited to cardboard. In the illustration, 30 tablets are shown. Of course, different numbers of tablets are also within the scope of the invention. While this invention has particular and unique applicability to the specific problem of dispensing fertility suppressive pills, it is apparent that it has wider applicability to other medical dispensing problems. Even more broadly, it has applicability to the dispensing of any plurality of items where the same conditions of periodic dispensing are involved. The items may be dispensed or removed from the package by any known means; the existence of the rupturable sheet, while referred to in this embodiment, is not essential to the principle of operation.

Broadly, the structure illustrated and described as the back panels and rupturable sheet may be defined as a means to hold a plurality of items in a single plane in an orderly array. Broadly, the day insert 20 may be described as a time insert. It is noted that for any given aperture in the time insert 20, each time marking adjacent thereto is parallel to or aligned with a different edge of the insert. Broadly, it is noted that a requirement of the apertures in the insert 20 is that they correspond to and register with the array of items. A requirement of the front panel 12 is that its windows correspond to and register with the items, and that each window be large enough to expose the item and only one of the time markings on the insert adjacent to that item. Of course, the registration of the window with the item need not be snug.

The scope of the invention is to be determined by the appended claims and is not to be limited by the foregoing description and drawings which are illustrative.

I claim:

1. An adjustable dispensing package adapted to hold and periodically dispense a plurality of items, comprising (a) means to hold said plurality of items in a single plane in an orderly array, (b) a time insert over said array comprising a sheet provided with a plurality of apertures, said insert having a plurality of edges of equal length, each aperture corresponding to and registering with one of said items in all orientations of the insert with respect to the array, each aperture having a plurality of time markings adjacent thereto, each time marking for each aperture being aligned with a different edge of said sheet, (c) a front panel over said time insert with a plurality of windows, each window corresponding to and registering with one of said items, and each window being larger than the corresponding aperture in the time insert and large enough to expose the item and only one of the time markings adjacent to the corresponding insert aperture.

2. An adjustable dispensing package as set forth in claim 1 wherein time insert is a square and said apertures, windows, and array of items are in rows and ranks parallel to the edges of said square.

3. An adjustable dispensing package as set forth in claim 2 wherein all the time markings exposed through said windows are aligned with one edge of said insert and each succeeding exposed time marking represents a periodically succeeding time period.

4. An adjustable dispensing package as set forth in claim 3 wherein said time insert sheet has an obverse and a reverse side, said time markings adjacent said apertures in said sheet being provided on both obverse and reverse sides.

5. An adjustable dispensing package as set forth in claim 4 wherein said front panel is foldably attached along one edge thereof to said item array holding means whereby said front panel may be folded open to expose said time insert sheet and folded closed over said array holding means and time insert sheet.

6. An adjustable dispensing package as set forth in claim 5 wherein said front panel and said item array holding means are provided with detachable locking means

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whereby said front panel may be held firmly over said array and said time insert sheet.

7. An adjustable dispensing package as set forth in claim 4 wherein said time markings are days of the week.

8. An adjustable dispensing package as set forth in claim 4 wherein said items are tablets.

9. An adjustable dispensing package as set forth in claim 8 wherein said tablets are medicinal preparations.

10. An adjustable dispensing package as set forth in claim 9 wherein said array holding means comprises an inner back panel, an outer back panel affixed thereto, a rupturable sheet between said inner and outer back panels, registering and corresponding apertures in said inner and outer back panels, and a deformable cap containing a tablet in each aperture in said inner back panel and positioned over said rupturable sheet.

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11. An adjustable dispensing package as set forth in claim 10 wherein said medicinal preparations are fertility suppressive preparations.

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LOUIS G. MANCENE, *Primary Examiner.*