

March 14, 1967

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3,308,962

PILL ORGANIZER AND METHOD

Filed May 10, 1965

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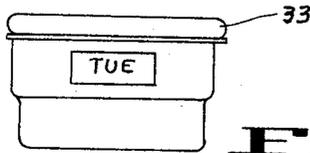


FIG. 4

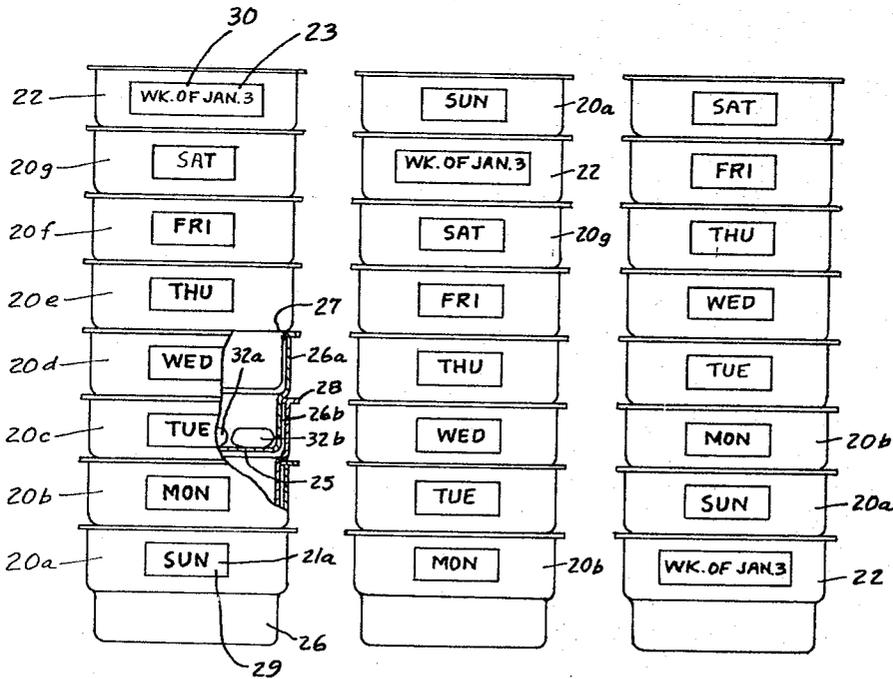


FIG. 1 FIG. 2 FIG. 3

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3 Sheets-Sheet 2

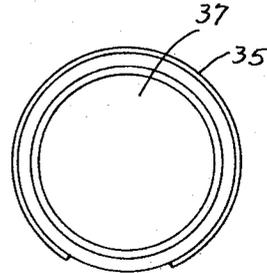


FIG. 8

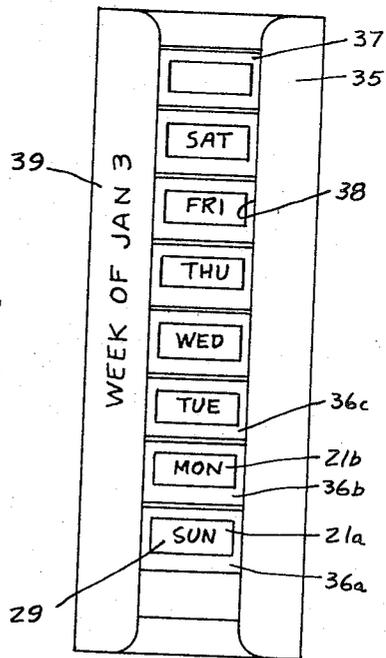
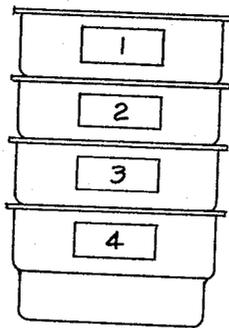
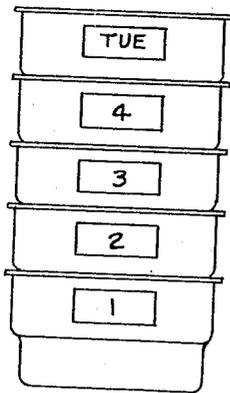


FIG. 5

FIG. 6

FIG. 7

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3 Sheets-Sheet 3

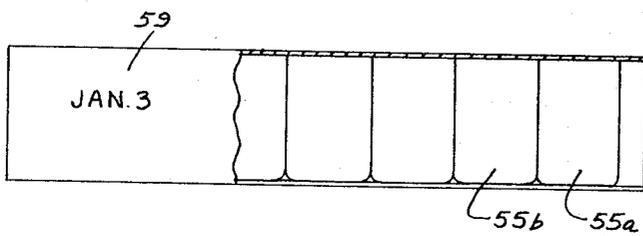


FIG. 11

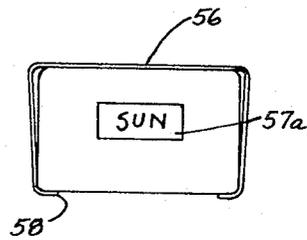


FIG. 12

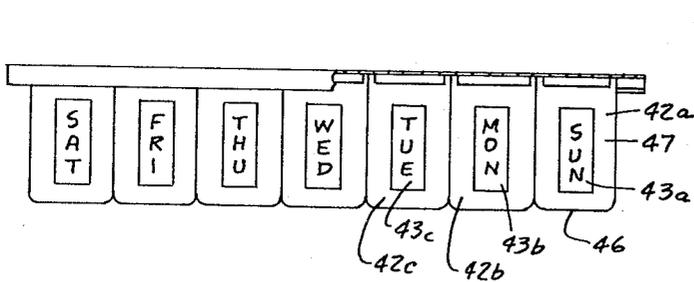


FIG. 9

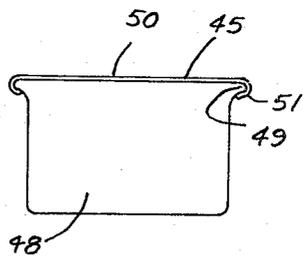


FIG. 10

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 Filed May 10, 1965, Ser. No. 454,563
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This invention relates to an improved method and apparatus for organizing, storing, and dispensing dosages of medication. It is particularly adapted for medication in the form of pills, i.e. tablets or capsules.

In modern medicine, patients are often required to take certain medications at regular intervals over an extended period of time. Frequently, several types of medication are prescribed simultaneously so that it is not uncommon for a person to be taking six or more different types of medication at various intervals. The intervals may be from once a day up to several times a day and the intervals may differ between the different medications prescribed for the patient.

It is very easy for the patient to lose track of whether he has taken the medication at a certain time and hence, either skip a dosage or take an extra dosage. This is particularly true where a number of different medications are being taken.

As many of the modern medications are relatively potent and require an exact dosage, it is important to keep track of what medication has been taken.

Certain types of medications which are routinely given over extended periods of time are very critical in regard to the dosage. For example, one general group of this type is the anticoagulants which reduce the tendency of the blood to clot. These particular medications are cumulative in nature over a period of several days or more, but the average dosage must be maintained very closely. The proper concentration of the medication in the body is determined by certain periodic tests and the dosage is adjusted accordingly. A common procedure is to prescribe one tablet a day of a strength which, by experiment, has been found to approximately maintain the proper concentration in the particular patient's body. If it is found that this dosage is not quite sufficient, the dosage may be changed by adding an extra half tablet every second day or every third day, or perhaps an extra whole tablet every third day or every second day. If it is found that the uniform dosage is a little too much, the schedule may be changed by reducing the dosage by a half tablet every second day or every third day.

It becomes apparent that where medications are given in which the dosage is different every third day or every second day over an extended period of time, it becomes increasingly difficult to keep track of the dosage.

Others have developed various apparatus and methods in an attempt to overcome this problem. In general, this prior art lacks flexibility.

One form of prior art makes use of a pill bottle cap having the numerals of a clockface molded on the top surface. The bottle cap has a rotatable plastic insert bearing a pointer which may be set to indicate the hour at which the next dosage of medication is to be taken. The usefulness of this device is more or less limited to persons taking one type of medication only, i.e. the medication in the bottle with the cap. Also, it is quite possible for a person to forget to reset the pointer when taking a dosage of medication.

Another general type of apparatus comprises a container having a plurality of normally closed compartments and means for opening one compartment at a time in response to the positioning of an indicator device. This means may comprise a rotatable member having an opening which may be lined up with one compartment at

a time. The use of this type of device by a person taking a plurality of types of medication involves an expenditure of a considerable amount of time and effort in placing the proper medication in the various compartments. The device also lacks flexibility in that the number of compartments provided may not match the schedule prescribed for the patient.

The type of device described above is best adapted to used for a single type of medication and in particular is best adapted to a throw away type of dispenser in which the medication is packed at the factory. Its usefulness in this regard is limited to certain types of medication as the size of the dosages and usually the interval between dosages is predetermined at the factory which does not permit much flexibility on the part of the prescribing physician.

My invention makes use of one or more storage units or magazines, each comprising a plurality of individual cuplike containers or cups which are assembled together and retained with sufficient force to prevent dislodgement during ordinary handling. The cups in a magazine are substantially identical but bear individual and distinct chronological markings and are arranged in chronological order. Means are provided whereby the cups may be readily removed in sequence from and replaced in the magazine. In the preferred embodiments to be described the cups may be removed in sequence and replaced in the magazine in chronological order at the other end of the row of cups.

The cups are an appropriate size to hold the medication, capsules or tablets, to be taken at a given time or, in some cases, to hold the medication to be taken in a given interval of time as, for example, a day or a half day.

The individual and distinct markings on the cups indicate the particular time interval that medication which may be placed in the individual cup is to be taken. In this description the expression "time interval" will be used as a general expression to cover both the case where all the medication in an individual cup is to be taken at one time, and the case where medication placed in an individual cup is to be taken at a number of specific times throughout the given time interval. Any type of marking which distinguishes one cup from another, and is understandable to the person using the apparatus may be employed. For example, the cups may be marked with the days of the week, such as SUN, MON, TUE, etc. This marking could be employed in cases where dosages are to be taken once a day. It could also be employed where medication is to be taken at a number of times throughout the day but all of the medication for a given day is placed in one cup. For half day intervals the individual cups could be marked, for example, SUN AM, SUN PM, etc.

Where dosages of medication are being taken several times a day and magazines are made up on a daily basis with individual cups for the various dosages to be taken, the individual cups could be marked simply 1, 2, 3, 4, etc., indicating the first, second, third, etc. dosage to be taken throughout the day.

One form of magazine that may be used comprises a plurality of cups which stack together in multiples so that, with the exception of the bottom cup, each cup forms a lid of the cup below.

Another embodiment of the apparatus of this invention comprises a plurality of cups which are arranged side by side in a row and are held together with a retaining member which also acts as a lid for the cups.

It is a primary object of this invention to provide a method whereby dosages of medication can be organized and stored ahead of time and readily dispensed at the proper time.

It is another object of this invention to provide a container and organizer to facilitate the taking of dosages of medication at the proper time.

Another object of this invention is to provide a method and apparatus for organizing, storing, and dispensing dosages of medication which are extremely flexible and can be readily adapted to the needs of the particular patient.

Other advantages and objects will become readily apparent from a consideration of the following description in conjunction with the drawings which illustrate preferred embodiments of my invention.

In the drawing:

FIG. 1 is an elevation partly in section illustrating one form of magazine filled with dosages of medication ready for use;

FIG. 2 shows the magazine of FIG. 1 after the dosage in the first cup has been dispensed;

FIG. 3 shows the magazine of FIG. 1 after the dosages in all of the cups have been dispensed;

FIG. 4 is a cup that has been separated from the magazine of FIG. 1 and provided with a separate cover;

FIG. 5 is a magazine similar to FIG. 1 but set up on a different time interval basis;

FIG. 6 is a magazine similar to FIG. 5 but set up in reverse order;

FIG. 7 is a magazine similar to FIG. 1 but having a sleeve type retaining member;

FIG. 8 is a plan view of FIG. 7;

FIG. 9 is another embodiment of the apparatus of this invention;

FIG. 10 is an end view of FIG. 9;

FIG. 11 is still another embodiment of the apparatus of this invention; and

FIG. 12 is an end view of FIG. 11.

The magazine illustrated in FIG. 1 consists generally of a plurality of individual cups *20a*, *20b*, *20c*, etc. These cups are stacked together so that, with the exception of the bottom cup, each cup forms the lid of the cup underneath.

The cups fit together with preferably a press fit or snap fit so that the cups will not be dislodged with ordinary handling of the magazine. The fit is adjusted in relation to the resilience of the material so that while the cups are retained together for ordinary handling, they may easily be separated manually.

Each of the cups *20a*, *20b*, *20c*, etc., is provided with a distinctive marking, *21a*, *21b*, *21c*, etc. With the exception of the markings, the cups are substantially identical.

The uppermost cup in the magazine may be covered with a lid member *22*. The lid member may also have a distinctive marking *23*.

The lid member *22* may be of substantially identical construction to the cup members *20a*, *20b*, *20c*, etc., or it may be made of somewhat lesser height. In any event, the lid member *22* is designed to fit with a cup placed either below or above it with the same type of engagement as provided between cups.

The cups illustrated in FIG. 1 each have a bottom portion *25*, and an annular side wall *26*. The upper portion of the side wall *26a* is of sufficiently larger diameter than the lower portion *26b* to permit the entrance of the lower portion of the cup above with a suitable fit. The upper end of the side wall *26* may be provided with an interior annular rib *27* to aid in providing the desired press or snap fit.

The upper end of the side wall *26* may also be provided with an outer annular rib *28*. The rib *28* serves to reinforce the top of the cup and at the same time provide an aid for manually holding the cup for removal from the magazine.

The cups *20a*, *20b*, *20c*, etc. may be provided with a suitable textured surface *29* in a suitable position to facilitate writing the markings *21a*, *21b*, *21c*, etc. on the

cups with a pencil. Likewise, the lid member *22* may be provided with a suitable textured surface *30*.

Another very satisfactory method of applying the distinctive markings to the cups is by means of adhesive labels which may be either preprinted or written on.

Textured surfaces *29* and *30* have the further advantage that they not only provide a means for writing directly on the cups or lid member, but also provide an aid for holding adhesive labels.

Relatively standard markings such as the days of the week as shown in FIG. 1, or numbers 1, 2, 3, 4, etc. as shown in FIG. 5, may be formed on the cups by any suitable means during manufacture. For example, letters or numbers may be molded on molded plastic cups.

In explaining the invention, let us consider a specific example where a number of medications are to be taken once a day. The magazine illustrated in FIGS. 1 through 3 may be employed, with the cups bearing markings of the days of the week as shown. If desired, the lid member may be marked to indicate the starting day of the week. This is particularly useful where more than one magazine is employed and dosages of medication are organized for more than one week at a time.

If more than one patient is involved, the lid member may be marked with the name of the patient.

Starting with an empty magazine, as illustrated in FIG. 3, the cups are separated and laid out on a suitable support, such as a counter or table, preferably being arranged in order from left to right. The proper dosage *32a*, *32b* of each medication for the particular day is then placed in each cup. The cups are then stacked as illustrated in FIG. 1 with the first day at the bottom and the cover member on top.

The first cup may be removed from the bottom of the magazine at any desired time and placed in a position of prominent view, ready for the medication to be taken at the proper time. For example, if the medication is taken in the morning, the cup would normally be placed in a conspicuous place the night before to remind one to take the medication. The empty cup may then be placed on the top of the magazine which will now appear as shown in FIG. 2.

The process of removing cups from the bottom and replacing them at the top of the stack is continued daily until all of the medication has been dispensed. The empty magazine will then appear as shown in FIG. 3. The position of the cover member being at the top, the intermediate or bottom position will indicate whether the magazine is full, partially full, or empty.

Let us consider another specific example where a person takes a single type of medication several times a day. The procedure, essentially as given above, may be followed, with each cup holding the entire medication for a given day. For dosages up to six or eight times a day, one can tell at a glance by observing the remaining tablets or capsules in the cup how many dosages have been taken.

The same general procedure as outlined above may be used where a number of different medications are taken at intervals two or three times a day.

For ease of portability, when an individual cup is removed from the magazine, it may be fitted with a separate cover *33* as illustrated in FIG. 4. It then becomes a handy dispenser for use throughout the day.

If a large number of types of medication are taken at frequent intervals throughout the day, it may be found best to employ a magazine similar to the one shown in FIG. 1, except that the magazine would be made up on a daily basis instead of a weekly basis, with the individual cups marked to indicate the time of day the dose is to be taken. Such a magazine is illustrated in FIG. 5.

An alternate and preferred method of dealing with medications taken at intervals of several times a day is to place all of the medication for each day in a single cup and make up a magazine as illustrated in FIG. 1. For each day, when the cup for that day is removed from the

bottom of the magazine, the medication is redistributed in the cups of an auxiliary magazine such as the one illustrated in FIG. 5. The auxiliary magazine may then be readily carried around throughout the day. The top cap of the auxiliary magazine may be the original cup from the primary magazine, FIG. 1 which contained the daily dosage of capsules or pills.

A variation of the method described in the above paragraph is to employ an auxiliary magazine such as illustrated by FIG. 6. If the magazine containing the various dosages to be used throughout the day is not to be carried around, it may be found more convenient to make it up in reverse order without a lid member as shown in FIG. 6. The dosage can then be dispensed from the top cup without separating it from the magazine. After dispensing the first dosage from the auxiliary magazine, the top cup is removed and placed on the bottom. This process is repeated until all dosages have been dispensed.

The embodiment shown in FIGS. 7 and 8 is a magazine similar to the one shown in FIG. 1, except that it is provided with a sleeve 35 into which the magazine cups may slide with a snug fit. The cups 36a, 36b, 36c, etc., and the lid 37, may be of the same construction and fit together the same way as the cups 20a, 20b, 20c, etc., and lid 22 of the magazine of FIG. 1, in which case the sleeve 35 merely gives additional support and protection, particularly when the magazine is being transported. The cups and lid of FIG. 7 may also be made to merely nest together and depend on the sleeve 35 for retention.

The sleeve 35 is preferably provided with a slot 38. The slot 38 permits the sleeve 35 to be made of somewhat smaller diameter than the outside of the cups so that it will form a spring fit for retention. The slot 38 also facilitates the insertion of a finger or thumb to aid in the removal of a cup from the magazine.

The sleeve 35 is of uniform diameter and open at both ends so that cups may be removed from and inserted in either end.

The sleeve 35 may be made of any suitable material, such as plastic or metal. I have found that a thin sleeve made of aluminum alloy operates very satisfactorily. Where the sleeve 35 is of an opaque material such as metal the slot 38 also provides visibility for markings 21a, 21b, etc. on the cups.

In cases where identification is required on the magazine, it may be convenient to place the distinctive marking 39 on the sleeve 35 rather than on the lid member as described in the embodiment shown in FIGS. 1 through 3. If the sleeve 35 is made of aluminum alloy, it is easy to write on with a lead pencil.

The operation of the embodiment shown in FIG. 7 is substantially identical to that described for FIGS. 1 through 3.

The magazine shown in FIGS. 9 and 10, comprises a plurality of aligned cups 42a, 42b, etc. The cups 42a, 42b, etc. are substantially identical with the exception of individual and distinct chronological markings. The cups are aligned in chronological order and are held in place by retaining member 45. Cups 42a, 42b, etc. are preferably rectangular as shown in order to fit together compactly. However, they may be of any suitable shape, as for example circular. As illustrated in FIGS. 9 and 10, each of the cups comprises a bottom 46, side walls 48, and end walls 47. The top of the end walls 47 are provided with outward extending lips 49. The retaining member 45 comprises a flat portion 50 and is formed generally in the shape of an open ended channel with inwardly extending lips 51. The flat portion 50 and the lips 51 of the retaining member embrace the lips 49 of the cups forming a track whereby cups may be slid through the magazine from one end to the other.

The fit between the cups and the retaining member is such that cups may readily be slid into, through, and out of the magazine by hand, while at the same time it provides sufficient friction so that the cups are retained in

the magazine and will not slide out during ordinary handling.

The magazine illustrated in FIGS. 11 and 12 is similar to the one illustrated in FIGS. 9 and 10 except that the cups 55a, 55b, etc. are embraced by the retaining member 56. As with the other embodiments, the cups are preferably provided with individual and distinct chronological markings 57a, 57b, 57c, etc. These markings may be placed upon a side wall of the cups as shown in FIG. 12, in which case only the earliest chronological marking 57a shows.

If the retaining member 56 is made of clear plastic, the markings 57a, 57b, etc. may be placed on the end wall of the cup, the same as shown in the embodiment of FIG. 9.

The retaining member 56 is preferably formed with a slot 58 of sufficient width to permit digital access to the cups. Retaining member 56 corresponds generally to the sleeve member 35 of the magazine shown in FIGS. 7 and 8. The slot 58 not only provides access to the cups but permits retaining member 56 to flex and grip the cups with a spring action to insure the proper fit.

If the magazine requires identification, a distinctive marking 59 may be placed on the retaining member 56. Likewise, a distinctive marking may be placed on the retaining member 45 of the magazine shown in FIGS. 9 and 10.

The method of organizing, storing and dispensing dosages of medication is substantially the same with the embodiments of the apparatus shown in FIGS. 9 through 12, as was described in connection with the previous embodiments. In dispensing the medication, a cup is removed from one end of the magazine, the medication dispensed, and the cup replaced in the other end.

Although the cups used in this invention are best adapted to hold solid medication in the form of capsules or tablets, they may also be used for powders or liquids. If medication in the form of tablets or capsules is prescribed along with liquid medication, the common procedure is to place the tablets and/or capsules in the magazine and place the bottle of liquid medication in a convenient place so that it can be taken at the same time as the tablets or capsules. Taking the required number of tablets or capsules will serve as a remainder that the liquid medication is to be taken and if the times of taking the liquid medications coincide with taking one or more of the solid medications, the purpose of keeping track of when the liquid medication is to be taken will be accomplished. A little planning on the part of the patient and doctor would normally insure that the times of taking the medication would coincide. However, if this is not possible, one may place markers in the cups to indicate that a liquid medication is to be taken.

Although I have described my invention in relation to preferred embodiments, it is to be understood that it is not limited thereto, but is defined by the scope of the appended claims.

I claim:

1. A method of organizing, storing and dispensing dosages of medication comprising the steps of:
 - providing a magazine comprising a plurality of separable individual cups, and means for retaining said cups together with sufficient force to prevent dislodgment during ordinary handling, while permitting manual removal and replacement of said cups,
 - providing said cups with individual and distinct markings indicating the time interval during which a dosage placed therein is to be taken,
 - laying said cups out in order on a suitable support,
 - placing the proper dosage of medication in each of said cups,
 - placing said cups in said magazine in chronological order,
 - removing the first cup from one end of said magazine,
 - dispensing the medication from said first cup, and re-

7

placing said first cup in said magazine at the other end thereof.

2. The method of claim 1, including the further steps of:

5 successively removing additional cups from one end of said magazine,

dispensing the medication from said additional cups, and

replacing said additional cups in said magazine at the other end thereof.

3. A method of organizing and storing batches of material comprising the steps of:

10 providing a magazine comprising a plurality of separable individual cups, and means for retaining said cups together with sufficient force to prevent dislodgment during ordinary handling, while permitting manual removal of successive cups from one end of said magazine and replacement on the other end,

15 providing said cups with individual and distinct markings indicating the time interval during which material placed therein is to be dispensed,

laying said cups out in order on a suitable support, placing the proper batch of material in each of said cups,

20 placing said cups in said magazine in chronological order, removing the first cup from one end of said magazine, dispensing the batch of material from said first cup, and placing said first cup in said magazine at the other end thereof.

4. A magazine for organizing, storing and dispensing dosages of medication comprising:

30 a plurality of individual cups of substantially identical construction,

an individual and distinct marking on each of said cups indicating the time interval during which a dosage of medication placed therein is to be taken,

35 said cups being arranged in chronological order, means provided in said magazine for frictionally retaining said cups together with sufficient force to prevent dislodgment during ordinary handling, and

40 means enabling successive manual removal of cups from one end of said magazine and manual replacement on the other end of said magazine.

5. A magazine for organizing, storing and dispensing batches of material comprising:

45 a plurality of individual cups of substantially identical construction,

an individual and distinct marking on each of said cups indicating the time interval during which a batch of material placed therein is to be dispensed,

50 said cups being arranged in alignment in chronological order,

means provided in said magazine for retaining said cups together with sufficient force to prevent dislodgment during ordinary handling, and

55 means for permitting successive manual removal of cups from one end of said magazine and manual replacement on the other end of said magazine, said last named means permitting each manual removal and each manual replacement to be effected in a single operation.

6. A method of organizing and storing dosages of medication comprising the steps of:

60 providing a plurality of individual cups of substantially identical construction, said cups being stackable,

65 providing said cups with individual and distinctive markings indicating the particular time interval during which a dosage of medication which may be placed therein is to be taken,

placing the proper dosage of medication corresponding to the respective time interval marking in each of said cups, and

70 stacking said cups together with the markings thereon in chronological order, removing the first cup from one end of the stack, dispensing the dosage of medica-

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tion in said first cup, and replacing said first cup on the other end of said stack.

7. The method of claim 6 wherein said first cup is removed from the bottom of said stack and replaced on the top of said stack.

8. A method of organizing and storing batches of material comprising the steps of:

providing a plurality of individual cups of substantially identical construction, said cups being stackable, providing means for retaining said cups together in a magazine with sufficient force to prevent dislodgment during ordinary handling, while at the same time permitting manual removal of a cup from one end of the magazine and replacement on the other end of said magazine,

10 providing each cup with a distinctive marking indicating the particular time interval during which material which may be placed in said cup is to be dispensed, placing the proper batch of material corresponding to the respective time interval marking in each of said cups, and

stacking said cups together with the markings thereon in chronological order, removing the first cup from one end of the magazine, dispensing the material from said first cup, and replacing said first cup on the other end of said magazine.

9. The method defined by claim 8 wherein said first cup is removed from the bottom of said magazine and replaced on the top of said magazine.

10. A magazine for organizing, storing and dispensing dosages of medication comprising:

15 a plurality of individual cups of substantially identical construction,

said cups consisting of a bottom cup and at least one other cup,

said cups being stacked together so that each of said other cups forms a lid for the cup underneath, the lower portion of each of said other cups being in nested relationship with the upper portion of the cup below,

20 an individual and distinct marking on each of said cups indicating the time interval during which medication placed therein is to be taken,

said cups being arranged in chronological order in said magazine,

25 resilient means provided in said magazine for retaining said cups together with sufficient force to prevent dislodgment during ordinary handling,

said means permitting manual removal of a cup from one end of said magazine by direct axial movement and replacement of said last named cup on the other end of said magazine by direct axial movement.

11. A magazine for organizing, storing and dispensing batches of material comprising:

30 a plurality of individual cups of substantially identical construction,

said cups being stacked together so that with the exception of the bottom cup, a lower portion of each of said cups is nested in an upper portion of the cup below, and forms the sole cover for said cup below, individual and distinct markings on said cups indicating the time interval during which material placed therein is to be dispensed,

35 said cups being arranged in chronological order in said magazine,

resilient means engageable thru linear movement provided in said magazine for retaining said cups together with sufficient force to prevent dislodgment during ordinary handling, and

40 means permitting manual removal of a cup from one end of said magazine and replacement of said last named cup on the other end of said magazine.

12. A method of organizing, storing and dispensing dosages of medication comprising the steps of:

45 providing a magazine comprising a plurality of sepa-

9 rable individual cups, and means for retaining said cups together with sufficient force to prevent dislodgment during ordinary handling, while permitting manual removal of successive cups from one end of said magazine and replacement on the other end, laying said cups out in order on a suitable support, placing the proper dosage of medication to be taken in a certain time interval in each of said cups, placing said cups in said magazine, removing a first cup from one end of said magazine, and dispensing the medication from said first cup, and placing said first cup in the other end of said magazine.

13. A method of organizing, storing and dispensing dosages of medication comprising the steps of: providing a plurality of individual cups of substantially identical construction, said cups being stackable, placing the proper dosage of medication to be taken in a certain time interval in each of said cups, stacking said cups together, removing the bottom cup from the stack, dispensing the medication in said last named cup, and placing said last named cup on the top of said stack.

14. A magazine for organizing, storing and dispensing dosages of medication comprising: a plurality of individual cups of substantially identical construction, resilient means engageable thru linear movement provided in said magazine for retaining said cups together in contiguous linear relationship with sufficient force to prevent dislodgment during ordinary handling, and means for permitting successive manual removal of cups from one end of said magazine and replacement on the other end of said magazine.

15. The apparatus of claim 14, including textured surface means on at least one of said cups to facilitate the application of a distinctive marking.

16. A magazine for organizing, storing and dispensing batches of material comprising: a plurality of individual cups of substantially identical construction, said cups being stacked together so that all but one of said cups form a lid for the cup underneath, a lid member on the top cup in said magazine, said lid member being adapted to nest the bottom portion of one of said cups if stacked on top thereof, an individual and distinct marking on each of said cups indicating the time interval during which material placed therein is to be dispensed. said cups being arranged in chronological order in said magazine, means permitting successive manual removal of cups from the bottom of said magazine and manual replacement on the top of said magazine, and means provided in said magazine for retaining together said cups and said lid member with sufficient force to prevent dislodgment during ordinary handling, both before and after removal of cups from the bottom of said magazine and replacement on the top thereof.

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