

[54] **METHOD AND APPARATUS FOR DISPENSING PHARMACEUTICAL DOSES**

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 [58] Field of Search **312/223, 266, 234.1-234.5; 221/2, 76, 129; 206/56 AC, 63.2 R, 78 B; 194/4**

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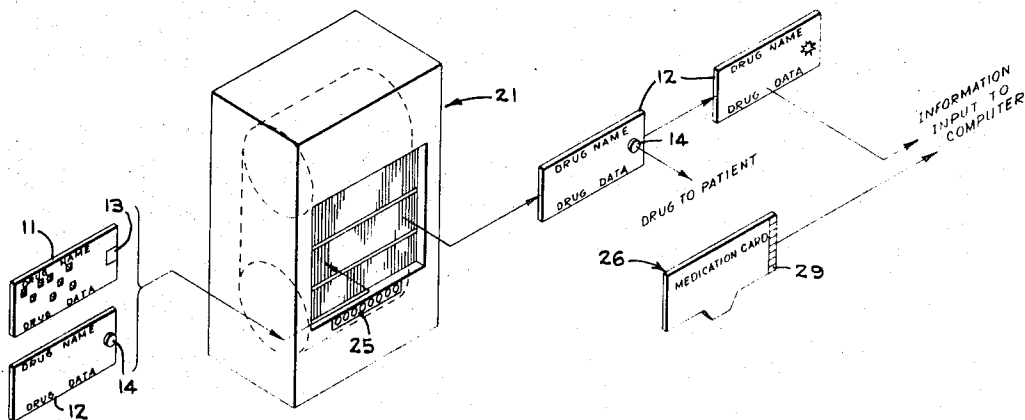
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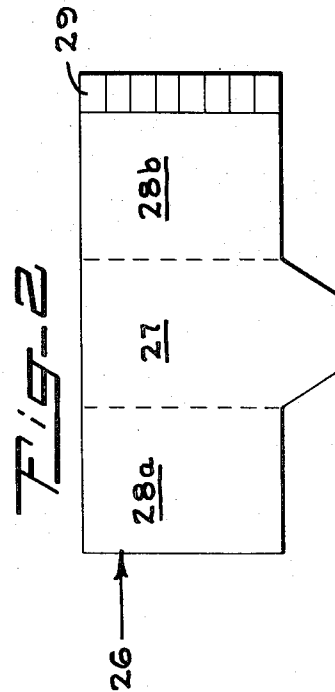
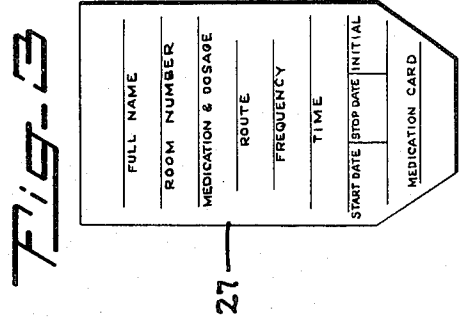
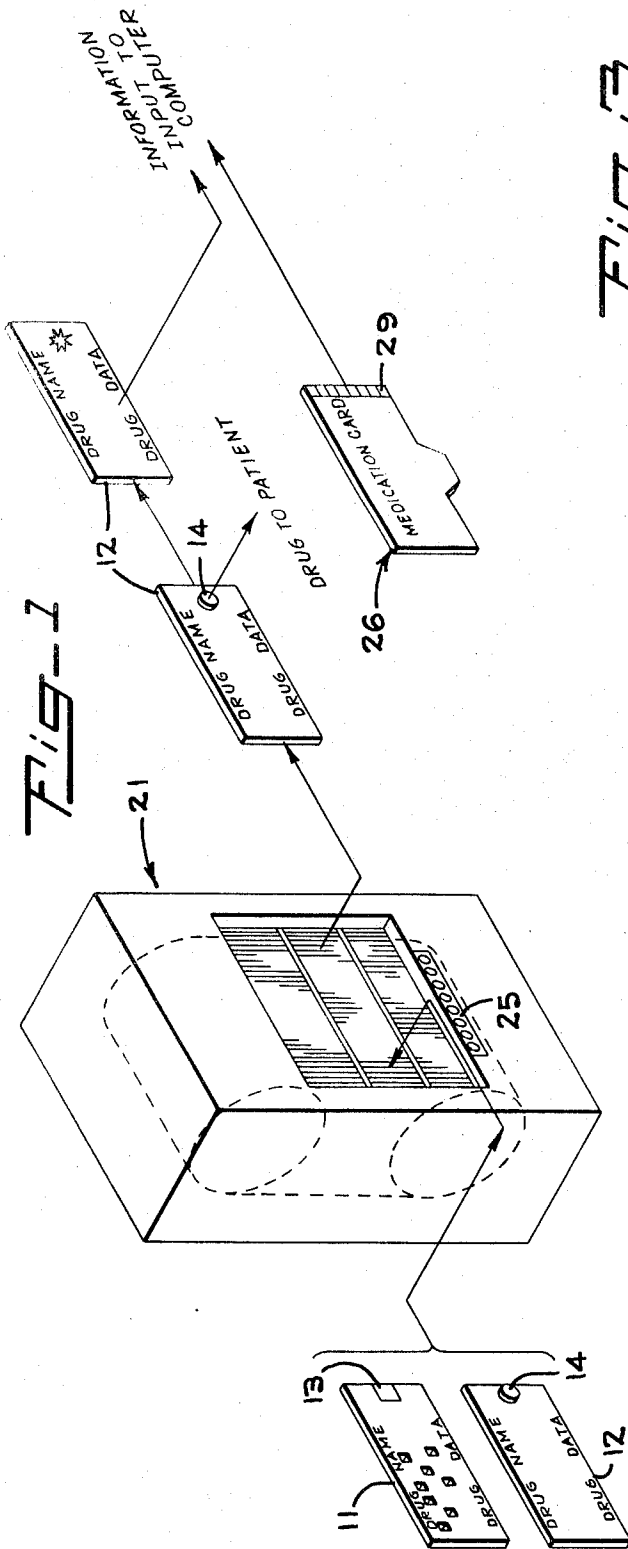
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[57] **ABSTRACT**

The invention is a system for dispensing pharmaceuticals to patients in large institutions such as hospitals. The system includes a carrier for carrying a unit dose and a storage device for housing a multiplicity of such carriers. The carrier is a card with a small quantity of a pharmaceutical product adhesively attached thereto. The carrier is provided with identification indicia so that the carrier may be automatically accessed from the storage device.

8 Claims, 3 Drawing Figures





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METHOD AND APPARATUS FOR DISPENSING PHARMACEUTICAL DOSES

FIELD OF THE INVENTION

The invention relates to dispensing systems and more particularly, to a dispensing system in which a unit dose of a selected pharmaceutical product is provided from a storage device.

BACKGROUND OF THE INVENTION

Previously, pharmaceutical products have been dispensed in hospitals by selecting the appropriate quantity and the type of medicine from one of virtually thousands of containers of pharmaceutical products.

The first problem is one of transfer of pharmaceuticals to containers other than the original supplied by the manufacturer. Central pharmacy receives drugs in bulk containers which, for handling convenience, are broken down into area stock bottles. The orders initiated by nursing personnel for ward supplies are filled from these stock containers; again, a breaking down into smaller units is involved. The last procedure in the subdivision is the removing of the drug item from the ward stock container at the time of preparing medications for the patient. The nurse transcribes the physician's medication order onto a Kardex and prepares a medication ticket. The medication ticket is filed according to the hour at which the next dose is to be administered. Before the medication hour, the nurse removes the medication ticket from the rack, interprets the order on the ticket, and prepares the dose for administration. The dose is then placed in a cup on the medication tray and "labeled" by placing the medication ticket beside the drug. After the medication is administered to the patient, the medication ticket is used by the nurse to "chart" the administration of the dose. It is this last procedure that is an especially dangerous practice. While it is possible for errors to occur at any step, the danger here is of special note: errors committed will probably never be recognized or corrected. All identity of the drug product is lost, except for the nurses's ability to recognize the item from its physical characteristics, which experience has taught is not always possible and judgement indicates is not to be considered a safe method. The physical characteristics of pharmaceuticals should not be used for final identity, but only as a means to question previous acts. With a number of personnel who become involved over a period time, there is a compound danger in this loss of identity, especially when the increasing use and potency of drugs is considered.

Additionally, each time a dose was required, the appropriate container had to be selected and the person dispensing the dose had to make himself aware of the pertinent information regarding the dose such as the incompatibilities, side affects, cautions, stability and special notations. Often this involved calling the appropriate pharmacy personnel, doctors, or other cognizant people. Once the dose was administered, a separate record was made including the patients name and location as well as the medication, dosage, date and time.

SUMMARY OF THE INVENTION

The object of the present invention is to provide a patient unit dose system wherein the amount of information interchange which is accomplished by more than one person is minimized, i. e., a system which automati-

cally retrieves a patient unit dose and handles the record thereof.

The present invention comprises a system employing individual dose carriers which may be machine processable information cards having the unit dose attached thereto together with all pertinent pharmaceutical information and the requisite pharmaceutical identification indicia. The system further includes a dose carrier storage device for retrieving a selected individual dose carrier. The medication, which was previously obtained from a large container and placed in a medicine cup, will now be removed by the nurse from the dose carrier card enabling positive identification of the medicine to be dispensed.

The prior art uncertainty in dispensing medicine from one of thousands of bottles and containers is obviated with the use of a dose carrier storage device wherein the dose carriers can be automatically retrieved on the basis of preselected storage compartments; for example, the dose carriers placed alphabetically in the storage device. The storage device is provided with automatic accessing so that any particular pharmaceutical carried in the servicing pharmacy would be available on the unit dose basis without unnecessary searching and with a maximum of speed.

The invention, when practiced as a method consists of preparing machine processable information cards by affixing predetermined doses thereto, then storing the cards in the appropriate storage device. Since the cards may be stored in a given sequence, the system is capable of retrieving a selected card. The last step consists in removing the predetermined dose from the selected card and administering such a dose to a patient, then making a record of the patients identity which information is then used for electronic data processing purposes.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a diagrammatic view of the method and apparatus of the present invention,

FIG. 2 is a detailed view of a medication card providing drug information and,

FIG. 3 is a view of the central medication record of the card of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the Figures, a dose carrier 11 has an adhesively affixed unit dose 13 of a particular pharmaceutical product. The dose carrier 11 preferably consists of a machine processable information card. The card bears pertinent information such as the drug name and various drug data including, for example, the synonym or trade name of the drug, its use, its administration, dose, various incompatibilities, side affects, onset of action, stability, cautions, notations, and catalog numbers. The card may or may not be suitable for key punch and IBM machine processing. In the event such key punch operation is contemplated, the unit dose 13 is packaged in a substantially flat envelope so that the card 11 resembles the so-called microfilche card. On the other hand, a more conventional type data card such as the card 12 may be equipped with a unit dose 14, with the card still bearing the drug name and drug data as the card 11. The adhesive or film overwrap fastening a unit dose to a dose carrier may be any medically inert substance. When the unit is packaged in a

flat envelope, the composition of the adhesive is immaterial.

Both cards are considered to be basically of the same nature and are stored in a storage device diagrammatically indicated at 21 capable of providing retrieval for selected cards.

Where the card is of the conventional information card type 12, it may be retrieved with any one of the well known automated records retrieval systems for letter size records. Such systems operate using predetermined storage order e.g., alphabetical, wherein operation of the appropriate controls indicated at 25 present the desired card.

Once a card 11 or 12 is retrieved from the storage device 21, the unit dose 13 or 14 is separated from the dose carrier card and administered by the nurse to a patient. A record of such administration is then made on the dose carrier card 11 or 12 to provide input information for recording, for example, in a computer.

A novel form of medication card 26 is utilized during administration of the drug to the patient, as shown in FIGS. 2 and 3. The medication card 26 includes three sections 27, 28a, and 28b which can be folded at separating score lines for ready reception in the medication tray. Individual adhesive tape sections 29 can be individually removed to enable repeated holding of the sections 27, 28a, and 28b in their folded relation when the repeated doses are given to a particular patient. These tape sections 29 can include the nine-digit National Drug Code number now utilized as standard identification for each type of drug and after removal from the card 26 can be attached to the patient's medical chart, billing form, or computer document, to provide additional data input to the mentioned computer as indicated in FIG. 1. If desired, similar tape sections 29 can be removably attached to the dose carrier cards 11 or 12 for corresponding application.

Preferably, as shown in FIG. 3, the central section 27 of the medication card 26 has the information shown in FIG. 3 printed thereon, indicating the drug name and dose given to a patient and pertinent information re-

garding the hours of administration. The other sections 28a, and 28b of the medication card 26, serve to provide pertinent drug information to the administering nurse regarding the particular medication given to the patient.

What is claimed is:

1. A pharmaceutical dose dispensing method comprising the steps of,
 - afixing predetermined individual doses to machine processable dose information carriers,
 - storing said carriers in a first storage device capable of retrieving selected carriers,
 - retrieving a selected carrier, and
 - removing the predetermined dose from said selected carrier.
2. The process of claim 1 wherein, said dose information carriers have pharmaceutical identification indicia thereon and wherein said retrieval step is based on searching said indicia.
3. A pharmaceutical dose dispensing system comprising,
 - an individual dose carrier comprising a machine processable information card having pharmaceutical identification indicia therein, and
 - a dose carrier storage device capable of retrieval of said carriers based on said pharmaceutical identification indicia wherein said dose carriers may be accessed automatically.
4. The apparatus of claim 3 wherein said machine processable information card is key punched.
5. The apparatus of claim 3 wherein said storage device is capable of retrieving said cards on the basis of key punched information.
6. The apparatus of claim 3 wherein said dose carrier has a unit dose adhesively fixed thereto.
7. The apparatus of claim 6 wherein said unit dose is packaged in a substantially flat envelope.
8. The apparatus of claim 6 wherein said adhesive is medically inert.

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