Oct. 17, 1967 R. M. MEYERS 3,347,358

DRUG DISTRIBUTION SYSTEM

Filed Oct. 11, 1966 2 Sheets-Sheet 1

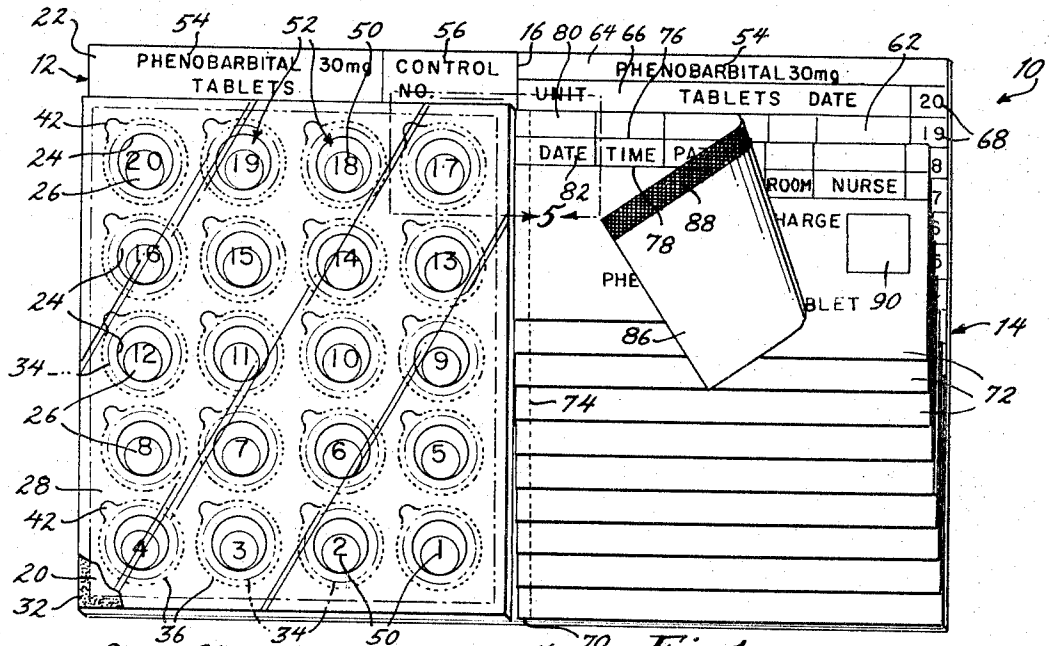



Fig. 1.

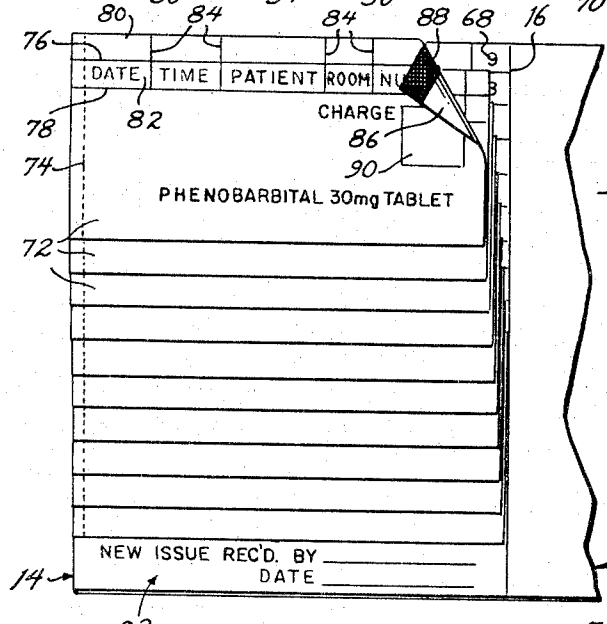



Fig. 2.

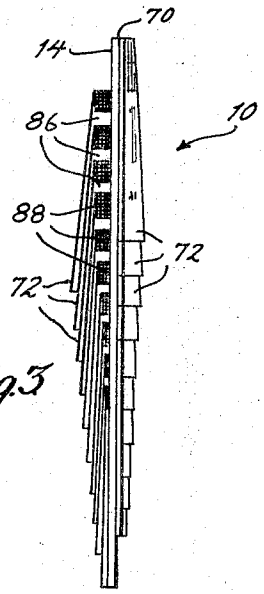


Fig. 3

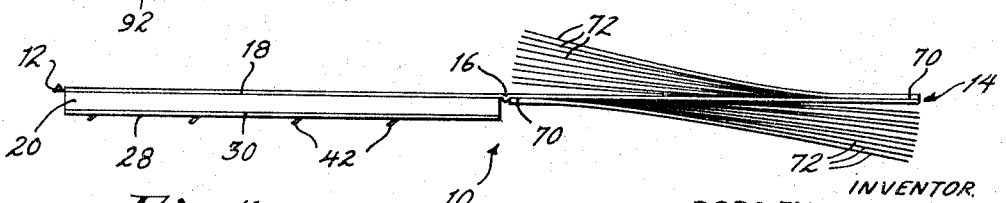


Fig. 4.

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DRUG DISTRIBUTION SYSTEM

Filed Oct. 11, 1966 2 Sheets-Sheet 2

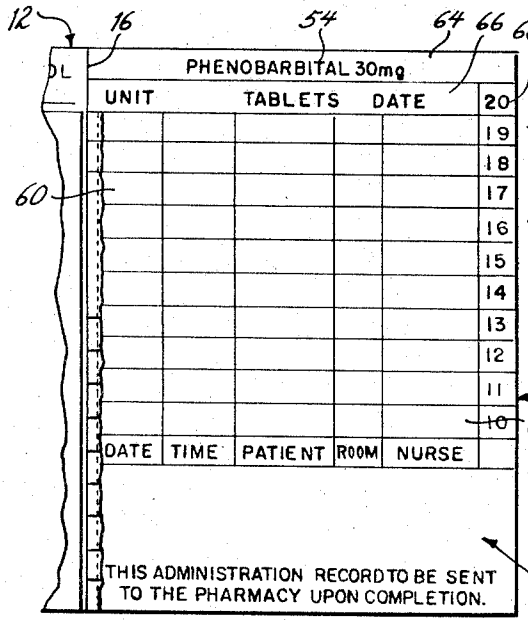



Fig. 9

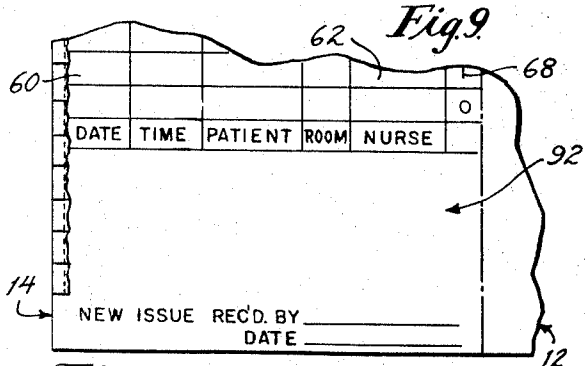



Fig. 10

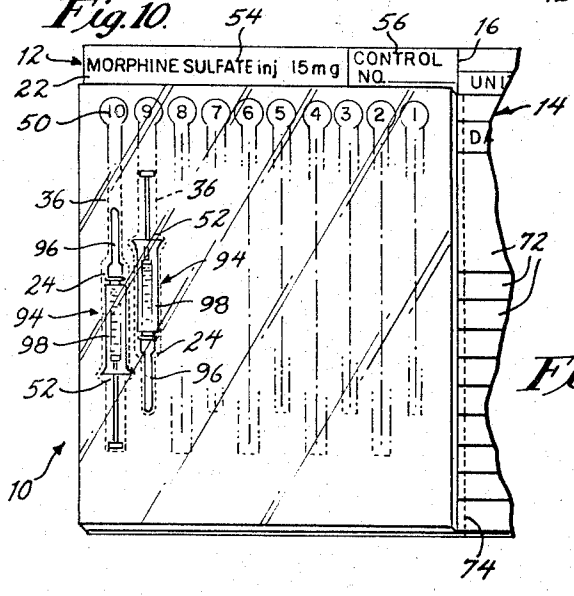



Fig. 11

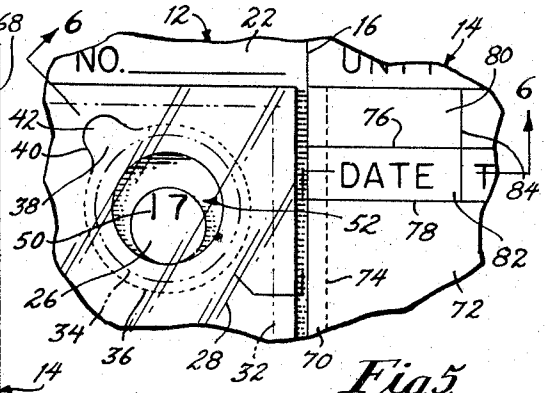



Fig. 5

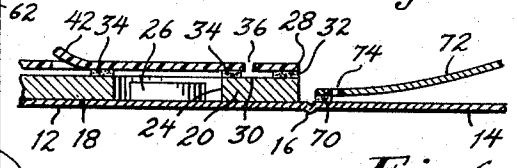


Fig. 6

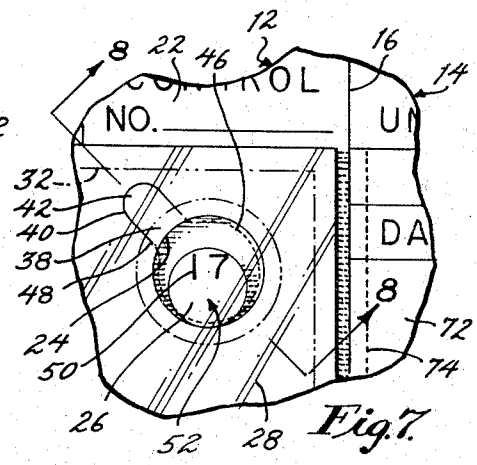



Fig. 7

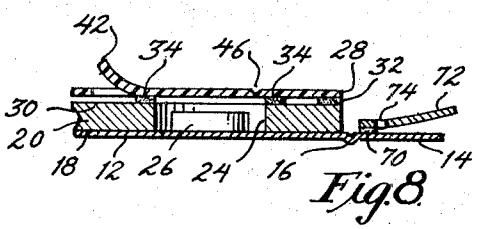


Fig. 8

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3,347,358

# DRUG DISTRIBUTION SYSTEM

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10 Claims. (Cl. 206—47)

## ABSTRACT OF THE DISCLOSURE

A device for controlling distribution of medicaments, pre-loaded syringes and the like having sections or leaves hinged to each other, one section including spaced wells to contain medicaments or pre-loaded syringes with a cover over the wells and a means to strip off the cover at each well and stubs secured on the other section in overlapped relation with duplicating means associated with each stub so that when one records data on the stub relative to a medicament or pre-loaded syringe being removed from a well, the data will appear as a permanent record on the section itself after the removal of each stub.

This invention relates to a device for controlling the distribution of drugs, particularly restricted drugs such as those which come within the control of the Federal Drug Abuse and Narcotic laws.

The primary object of this invention is to provide a drug distribution and control system for hospitals and nursing homes which is relatively simple to carry out yet will affect substantial reduction in the work load of pharmacists, nurses and account clerks.

Another object of the invention is to provide a drug distribution and control system in which the pharmacist is enabled to exercise tighter control over the dispensation of drugs, yet the time and space required by him for the handling of the drugs, the filing, recording and administration of the records and the container costs are drastically reduced.

Another object of the invention is to provide a drug distribution and control system of the character described which will effectively reduce the paperwork of the nursing service and the time required to inventory the drugs at every nursing shift change. It will also make available to the nurse at all times a clearly labeled uncontaminated package of the drugs and will eliminate the need for the nurse to make out a narcotic drug order form, sign a separate narcotic stub, or physically count doses again.

Another object of the invention is to provide a package for use in a drug distribution and control system, which package simplifies recordkeeping by the nurse, which serves to indicate when, where and to whom the drugs have been dispensed and how many drugs still remain in the package, serves as a permanent record for the pharmacist or the account clerk when all of the drugs have been dispensed at the nursing station, and which is provided with means for retaining the drugs or pre-loaded syringes in a sealed condition in such a manner that the seals are broken only for each drug or syringe dispensed.

These and other objects of the invention will become more apparent as the following description proceeds in conjunction with the accompanying drawings, wherein:

FIG. 1 is a front view of the device of the instant invention with a partial perspective at the side to show overlap of the dispensing stubs;

FIG. 2 is a fragmentary rear view of the device also with a partial perspective;

FIG. 3 is a side elevational view of the device;

FIG. 4 is a plan view thereof;

FIG. 5 is an enlarged elevational view of the area **5** of FIG. 1;



FIG. 6 is a sectional view taken on the line **6—6** of FIG. 5;

FIG. 7 is a view similar to FIG. 5 of a modified form of the invention;

FIG. 8 is a view similar to FIG. 6 of the modification shown in FIG. 7;

FIG. 9 is a fragmentary front elevational view of the device with all of the dispensing stubs removed to disclose details of construction;

FIG. 10 is a fragmentary rear elevational view of the device with the dispensing stubs removed; and

FIG. 11 is a fragmentary front elevational view of the drug-retaining portion of the device showing a modification thereof as applied to pre-loaded syringes.

Specific reference is now made to the drawings in which similar reference characters are used for corresponding elements throughout.

The device or package of the instant invention is generally indicated at **10** and is preferably in the form of a book having a leaf portion **12** for the retention of the medication or pre-loaded syringes and a leaf portion **14** for recordkeeping, the leaves being attached to each other by a means **16**, such as binding, whereby the leaf **14** can be folded upon the leaf **12** to provide a unit which is flat for easy storage. While the package can be of any desired size and made of any suitable materials, it is preferred, for conservation of space and for economy, that each leaf be approximately 5½ by 4¼ inches and that the unit be made of cardboard.

Secured as by adhesive or any other suitable means to one face **18** of the first leaf **12** is a member **20**, preferably fabricated of cardboard, which is as long and as wide as the leaf **12** except for a top area **22**. The member **20** is of a predetermined thickness and includes a series of spaced wells or recesses **24** which are deep enough to receive medication **26** in the form of tablets, capsules, or ampules and in certain instances, pre-loaded syringes as shown in FIG. 11. While the wells or recesses **24** may be of any shape, the circular shape is preferred and the size should be such as to permit one to easily insert the finger for the removal of the medication or pre-loaded syringe with comparative ease. To seal in the medication a transparent sheet of material **28**, preferably plastic, which is coextensive with the member **20** is secured to the upper face **30** of said member around the margin thereof by a suitable pressure-sensitive adhesive **32**.

Means is provided whereby the nurse can have access to each well or receptacle **24** separately and individually for the medicament to be dispensed while the remaining wells remain sealed. In the modification shown in FIGS. 5 and 6, this means comprises the following. Around the periphery of each well **24**, the transparent cover sheet **28** is secured by means of an annulus of pressure-sensitive adhesive **34**. Beyond the annulus of adhesive, perforations **36** are provided through the transparent sheet **28** around the annulus except for that they are discontinued at a portion **38** at a predetermined location. At that portion the transparent cover sheet **28** is cut as at **40** to provide a pull tab **42**, the cut **40** being coextensive with the arcuate line of perforations **36**. Thus, if the nurse wishes to dispense a tablet from one of the wells or receptacles, she merely lifts the pull tab **42** and pulls it whereby the pressure-sensitive adhesive bond **34** is first broken and then the perforations **36** are torn through to completely expose the well.

In the modification shown in FIGS. 7 and 8, the construction is essentially the same except for the fact that indentations **42** are provided which are spaced inwardly of the annulus of pressure-sensitive adhesive **34**, which indentations become coextensive as at **48** with the cut **40** that provides the tab **42**. In this construction access to the receptacle can be had by pulling back on the

tab 42 and since the spaced indentations 46 constitute a weakened area, the sheet will give way at this area, and the receptacle or well will be exposed. In this connection it should be understood that the perforations 36 and the spaced indentations 46 can be replaced with a continuous weakened area, such as a score line, in which line the thickness of the sheet 28 is significantly less than its overall thickness.

A number 50 is imprinted or otherwise placed upon those portions 52 of the transparent sheet which cover the receptacles or wells 24 and which are removed with the tabs 42 for dispensing the medicament or pre-loaded syringe. As will be seen in FIG. 1, these numbers are arranged in descending order from the uppermost left hand receptacle or well 24 to the lowermost right hand receptacle or well 24. Thus, if 20 receptacles or wells are provided in the member 20, the uppermost left hand receptacle will contain the number 20 and going from left to right the numbers will descend in the order of 20, 19, 18, 17, etc. until the number 1 is attained which is positioned over the lowermost right hand well or receptacle. The reason for this arrangement is that the nurse can readily ascertain by inspection how many tablets, ampules, capsules or pre-loaded syringes still remain undispensed by looking at the highest number still remaining on the sheet 28.

In the area 22 above the member 20 a legend 54 is imprinted or applied by a suitable label which identifies the medicament by chemical and/or trade name as well as the dosage. For example, the legends can be "Phenobarbital 30 mg.—Tablets," "Seconal Sodium 100 mg. (Secobarbital Sodium)—Capsules" or similar legends depending upon the medicament in the package. This legend can be placed on the package by the pharmaceutical manufacturer or supplier or can be placed thereon by the hospital or nursing home pharmacist. The legend will also contain a control number 56.

Coming now to the data keeping and recording leaf 14 of the package, it will be seen from FIGS. 9 and 10 that the leaf has a front surface 58 comprising a series of vertical and horizontal columns 60 and 62, respectively. Above the uppermost horizontal column 60 is an area 64 in the center of which is also imprinted or affixed by any suitable means the legend 54 identifying the drug and its dosage which appears on the leaf 12. A line 66 extends substantially midway of the area 64, below which appears the word "Unit" to one side and the word "Date" to the other. When the pharmacist issues a full package to a nursing station, he inserts the unit number of the nursing station above or next to the word "Unit" and the date of issue above or next to the word "Date." In the vertical column closest to the free edge of the leaf 14 are a series of descending numbers 68 corresponding to the numbers 50 on the removable covers 52 of the transparent sheet 28 of the other leaf 12. The size of the package could be such that the numbers 68 equal those numbers 50 on the other leaf 12 or, if it is desired to keep the package more compact, the size can be reduced in half and the reverse side 70 of the leaf 14 can be constructed in the same manner as the front side 58 with the numbers 68 continuing thereon to the end of the series.

Affixed by suitable adhesive 70 along the edge of the front face 58 of the leaf 14 at fold line 16 is a plurality of overlapping stubs or receipts 72, each of which is provided with a line of perforations 74 adjacent the adhesive layer 70. Each stub is unsecured at the opposite edge which overlies the column of numbers 68.

At the top of each stub 70 are two spaced horizontal lines 76 and 78 which divide the same into two horizontal columns 80 and 82 respectively. Spaced vertical lines 84 are provided through the columns 80 and 82 dividing them into discrete areas. In the lower column 82 appears the words "Date," "Time," "Patient," "Room," "Nurse," the upper column 80 being blank. On the reverse side 86 of the stub 70 and behind the upper column 80, the stub is provided with an impressionable transfer or duplicating surface 88, such as carbon paper. The stubs 70 are so arranged and so overlapped that each of their upper horizontal columns 80 in front of the carbon paper or duplicating surface 88 precisely overlies each of the numbered horizontal columns 62 which has been imprinted upon the front face 58 of the leaf 14. For additional security, each stub 70 can be provided with indicia identifying the drug, such as legend 54 and a box 90 can also be provided in which the charge for the dispensed medicine can be inserted.

At the bottom of the front face 58 of the leaf 14, the legend "This administration record to be sent to the pharmacy upon completion" may appear. As mentioned earlier, if it is desired to keep the package as compact as possible, the stubs 70 can be overlapped and secured in the same manner as previously described to the reverse face 92 of the leaf 14, see FIG. 10, and at the bottom of that face or on the front face 58, it is preferred that a legend appear entitled "New issue received by————————" and "Date————————."

As stated earlier, the package can be employed with tablets, capsules or ampules and, if so desired, with pre-loaded syringes 94 as shown in the modification of FIG. 11. Thus the leaf 12 will have affixed thereto the same member 20 and the transparent cover member 28, but the receptacles or wells 24 will be elongated and will exceed the length and width of the pre-loaded syringes 94 sufficiently to permit the proper retention and removal of the syringes therefrom. The cover member 58 for each receptacle will be secured by adhesion 34 around the well or receptacle 24 and will be provided with the perforations 36 and with a rip tab 42 as previously described. In view of the conventional size of pre-loaded syringes it is contemplated that the package will be such that the leaf 12 will contain 10 of such syringes and there will be 10 stubs 70 affixed in overlapping relationship only to the front face 58 of the second leaf 14. For compactness, the pre-loaded syringes 94 are arranged with their shielded needles 96 alternating with their barrels 98 across the width of the leaf 12, thereby making it possible to reduce the overall width of the package.

In use, the control number is put on the package when it is filled, either by the pharmaceutical company or by the pharmacist. The filled device or package will then be issued by the hospital or the nursing home pharmacy to a particular nursing unit and the nursing unit and date of issue are entered on the leaf 14 in the appropriate space in the area 64. When it becomes necessary for the nurse to dispense the tablet, capsule, ampule or pre-loaded syringe to a particular patient, she lifts the pull tab 42 of the upper left hand receptacle or well 24 and rips off the cover member 52 with its number thereon and then reaches in the well to remove the medicament or pre-loaded syringe. At that time she writes on the top-most stub 70 in the upper horizontal column 80 the date, time, patient, room and nurse, which data is transferred via the carbon or duplicating surface 88 to the corresponding horizontal column 62 of the front face 58 of the leaf 14. She then removes the stub 70 by tearing it along the perforated edge 74 and stores the stubs temporarily. She may send the stubs on a daily basis to the pharmacy for pricing. The arrangement of numbers 50 on the transparent cover 28 of the leaf 12 and the arrangement of the numbers 68 on the front face 58 of the other leaf 14 is such that the nurse by looking at the last exposed number knows automatically the remaining number of undispensed medicaments or pre-loaded syringes still contained in the package.

When all the stubs 70 have been removed and there are no longer any medicaments or pre-loaded syringes left in the package, the nurse separates the leaf 12 from the leaf 14 and discards the leaf 12. She then returns the leaf 14 with a permanent record of the dispensed medica-

ments or pre-loaded syringes to the pharmacy in exchange for a new replacement unit, the pharmacy storing the leaf **14** in a small file as an administration record.

While preferred embodiments of the invention have here been shown and described, it should be understood that skilled artisans may make minor variations without departing from the spirit of the invention and the scope of the appended claims. Thus, for example, the stubs **70** can be in the form of punch cards for use in automatic data processing systems. The package which is intended to fold around the line **16** in the form of a book so that it will be compact on storage, may be made of any suitable material provided that the faces of the second leaf **14** containing the overlapped stubs **70** will be able to take an impression from the carbon or duplicating surfaces **88** of the stubs.

I claim:

**1.** A device for controlling distribution of medicaments, pre-loaded syringes and the like comprising a unit having first and second sections, said first section including a member having spaced wells adapted to contain medicaments or pre-loaded syringes, a transparent covering secured over said member and closing off said wells, means to strip off said covering at each well independently of the other wells for access to the interior thereof, and means on said second section correlated to said first section to keep a record of each medicament or pre-loaded syringe removed from a well, said last-named means including a surface having a vertical series of lined spaces corresponding in number to said wells forming a blank chart, a plurality of stubs corresponding in number to said wells, means securing said stubs in overlapped relation on said surface, each stub including a space adjacent its top edge overlying a corresponding space on said surface, and a duplicating means on the underface of each of said spaces adjacent the top of said stub so that when one records data relative to a medicament or pre-loaded syringe removed from a well in said space of said stub, the data will be transferred to and appear as a permanent record in said lined spaces of said chart.

**2.** The combination of claim **1** wherein said duplicating means is carbon paper.

**3.** The combination of claim **1** wherein said means securing said stubs in overlapped relation on said surface of said second section includes adhesive along one common edge of said stubs and means adjacent said adhesive to permit ready removal of each stub.

**4.** The combination of claim **1** wherein said means to strip said covering at each well includes adhesive securing said covering around the periphery of each well, a weakened area in said covering adjacent said adhesive, and a tab having edges separated from said covering but coextensive with said weakened area.

**5.** A device for controlling distribution of medicaments, pre-loaded syringes and the like comprising a book-like unit having first and second sections hingedly secured to each other to permit one section to be folded upon the other, said first section including a member having spaced wells adapted to contain medicaments or pre-loaded syringes, a covering secured over said member and closing off said wells, means including a weakened area in said covering peripherally adjacent each well and a pull tab having edges separated from said covering but coextensive with said weakened area to strip off said covering at each well independently of the other wells for access to the interior thereof, and means including stubs detachably secured on said second section in overlapping relation correlated to said first section to keep a record of each medicament or pre-loaded syringe removed from a well.



**6.** The combination of claim **5** wherein the wells are consecutively numbered, the number on each well being removed with the means stripping off the covering at each well so when the covering is stripped in the direction of decreasing numbers, the number succeeding the last empty well will indicate the number of remaining medicaments or preloaded syringes.

**7.** The combinaton of claim **5** wherein said means to strip said covering at each well further includes adhesive securing said covering around the periphery of each well, inwardly of said weakened area.

**8.** The combination of claim **7** wherein said weakened area comprises spaced perforations.

**9.** The combination of claim **7** wherein said weakened area comprises a zone of indentations spaced inwardly of said adhesive.

**10.** A device for controlling distribution of medicaments, pre-loaded syringes and the like comprising a unit having first and second sections, said first section including a member having spaced wells adapted to contain medicaments or pre-loaded syringes, a covering secured over said member and closing off said wells, means to strip off said covering at each well independently of the other wells for access to the interior thereof, and means on said second section correlated to said first section to keep a record of each medicament or pre-loaded syringe removed from a well, said last-named means including a backing surface, a plurality of stubs corresponding in number to said wells, means detachably securing said stubs in overlapped relation on said surface, each stub including a space adjacent one of its edges overlying said surface, and a duplicating means on the underface of each stub at said spaces so that when one records data relative to a medicament or pre-loaded syringe removed from a well in said space of said stub, the data will be transferred to said surface and appear as a permanent record thereon after removal of each stub.


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