

(21) Application No: **0808652.2**

(22) Date of Filing: **13.05.2008**

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(51) INT CL:
A61J 1/03 (2006.01) **B65D 83/04** (2006.01)

(56) Documents Cited:
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(SCHUTTEN) "Patient Advocacy and Education",
[online] 2005, available from:
[http://www.identimed.com/articles/PR-IdentiMed-](http://www.identimed.com/articles/PR-IdentiMed-July192005.pdf)
[July192005.pdf](http://www.identimed.com/articles/PR-IdentiMed-July192005.pdf) Accessed 25/08/09
AU2004100732 A4

(58) Field of Search:
INT CL **A61J, B65D**
Other: **Online: WPI, EPODOC, Internet**

(54) Abstract Title: **Pharmaceutical dispensing apparatus**

(57) A frame for pharmaceutical dispensing apparatus comprising at least two arcuate members 10, 11 and a base 1, the arcuate members 10, 11 being arranged to be supported in the base 1 in an upright position such that one or more blister packs and/or patient information leaflets having two or more slots can be removably retained by the upright frame members 10, 11 such that a stack of blister packs can be retained and freely dispensed from. Each arcuate member 10, 11 may include a first straight section 14, an arched section 15 and a second straight section 16, which is spaced from the first straight section 14. The frame may be in the form of a ring binder. Each blister pack may comprise a plurality of blisters for receiving pharmaceuticals. The blister packs could be sealable in such a way so that pushing against the pharmaceutical causes a seal to rupture, thereby dispensing the pharmaceutical product. Each blister pack may have a slot that is received by a frame member 10, 11 and a cut which forms a resiliently deformable slot of lower width than the frame of an upright frame member 10, 11. Each blister pack may be sealed by an adhesive sheet mounted on the back; the adhesive sheet may be a different colour to the blister pack. Each blister pack may be transparent and the blister pack and frame may be different colours.

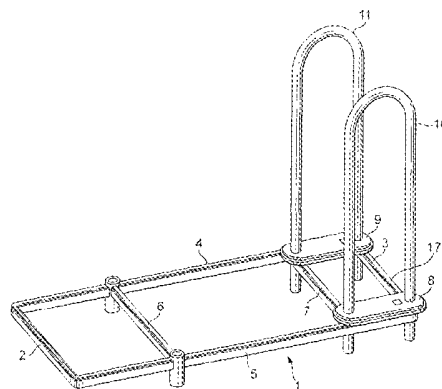


FIG. 1

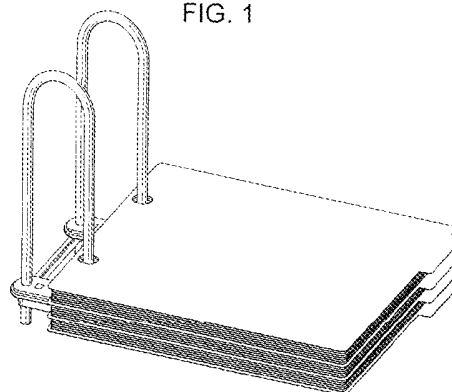


FIG. 6

The claims were filed later than the filing date but within the period prescribed by Rule 22(1) of the Patents Rules 2007.

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

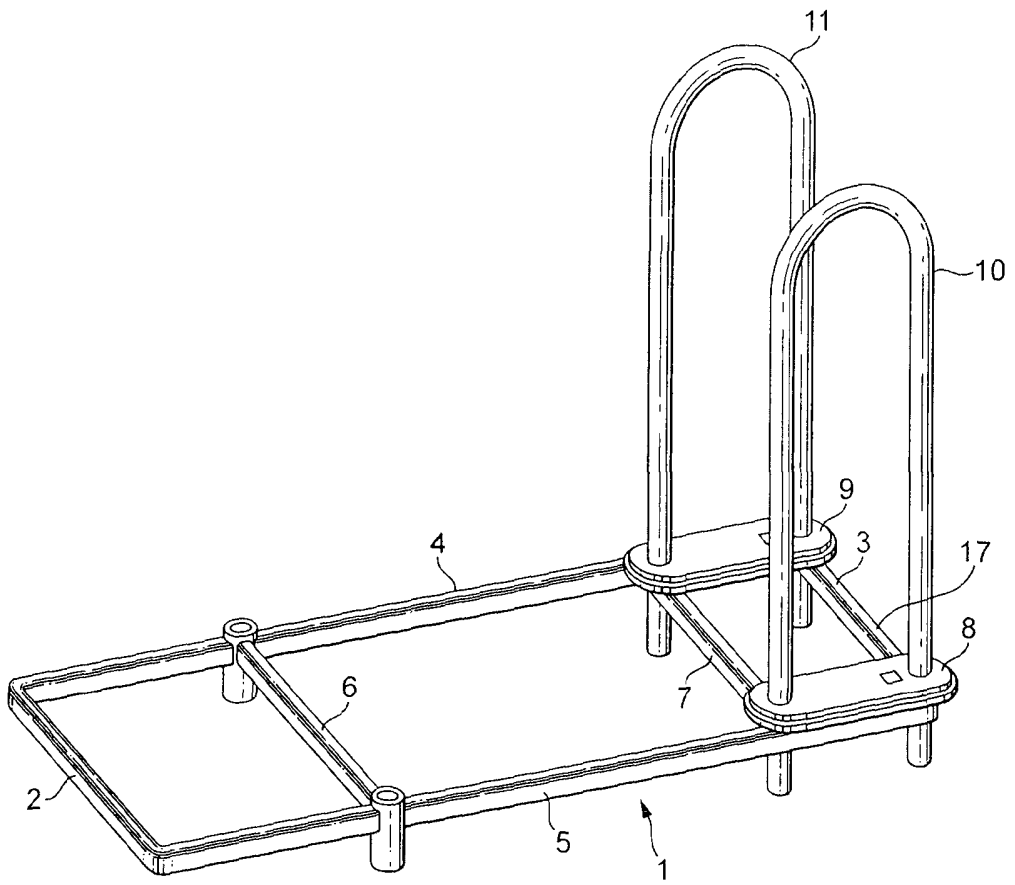
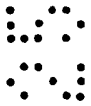
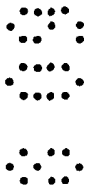


FIG. 1



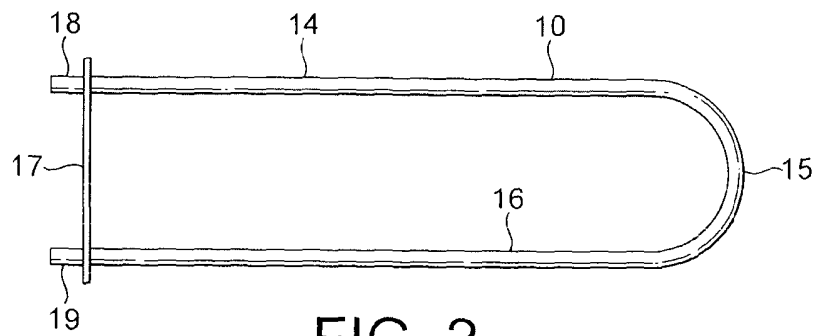


FIG. 2

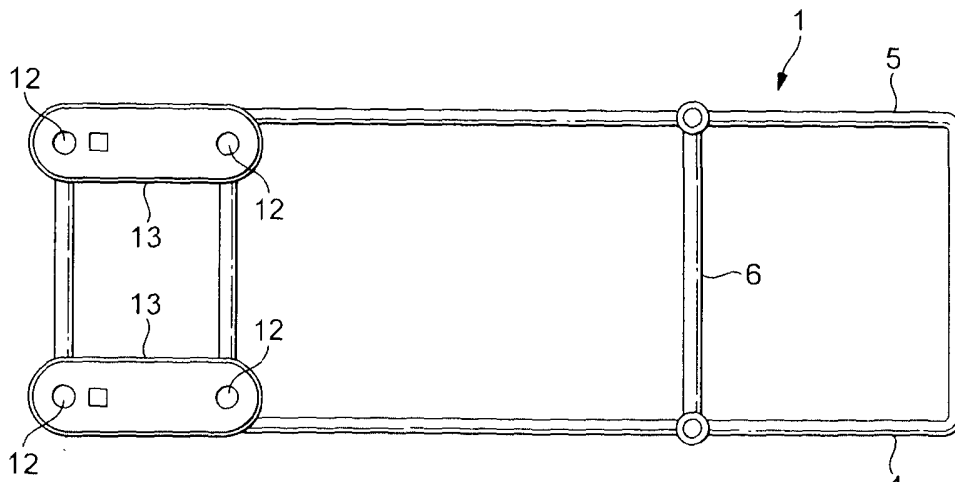


FIG. 3

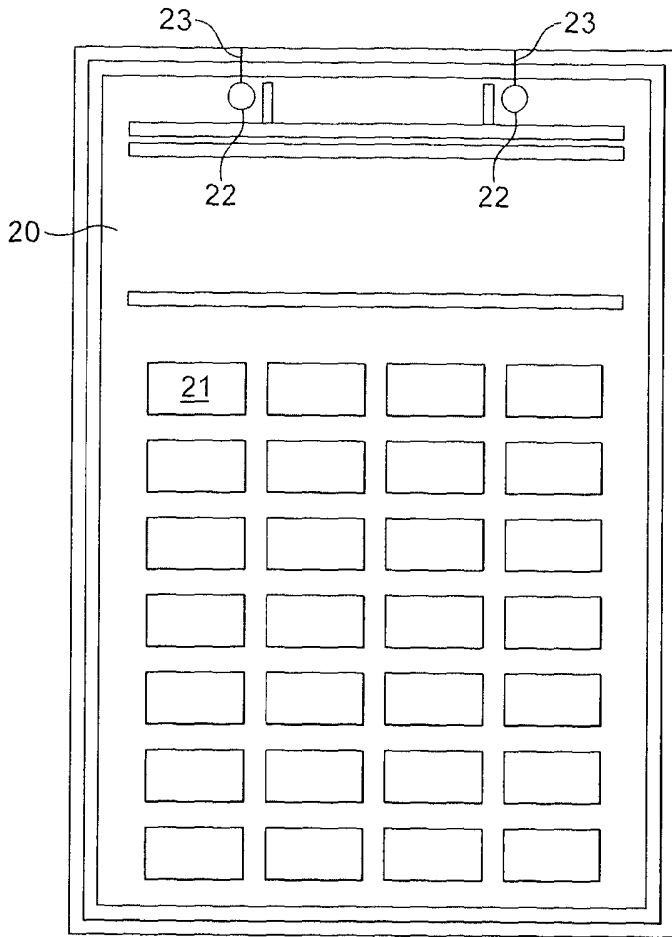


FIG. 4(a)

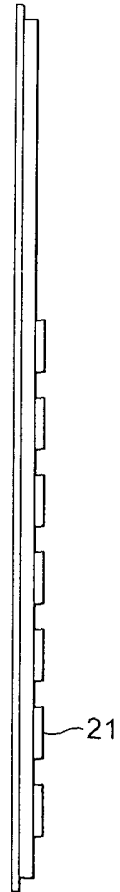


FIG. 4(b)

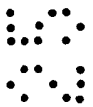
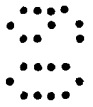


FIG. 4(c)

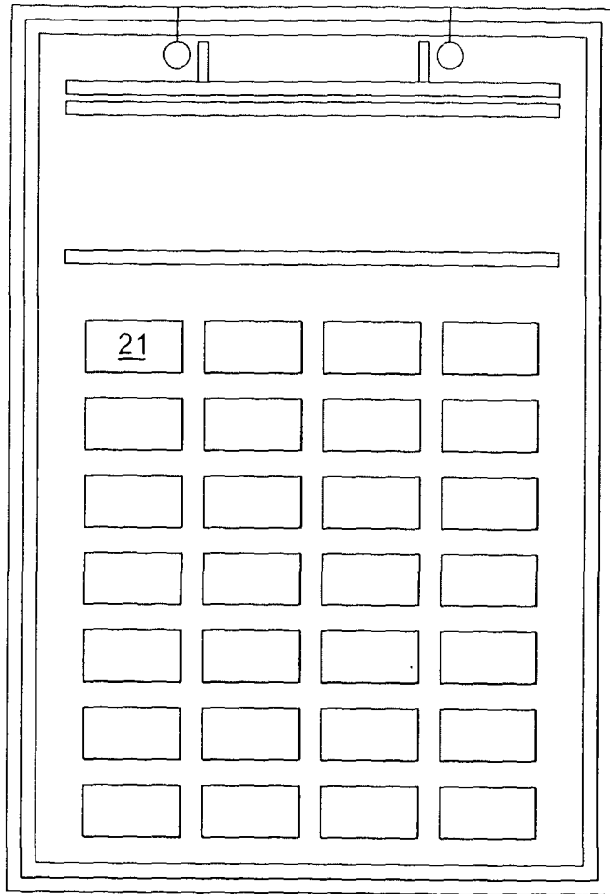


FIG. 5(a)

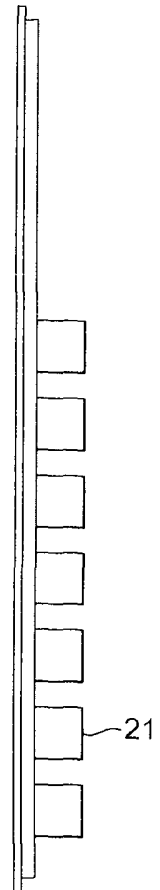


FIG. 5(b)

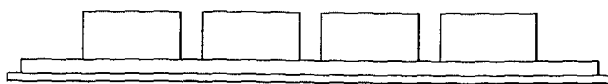
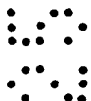


FIG. 5(c)



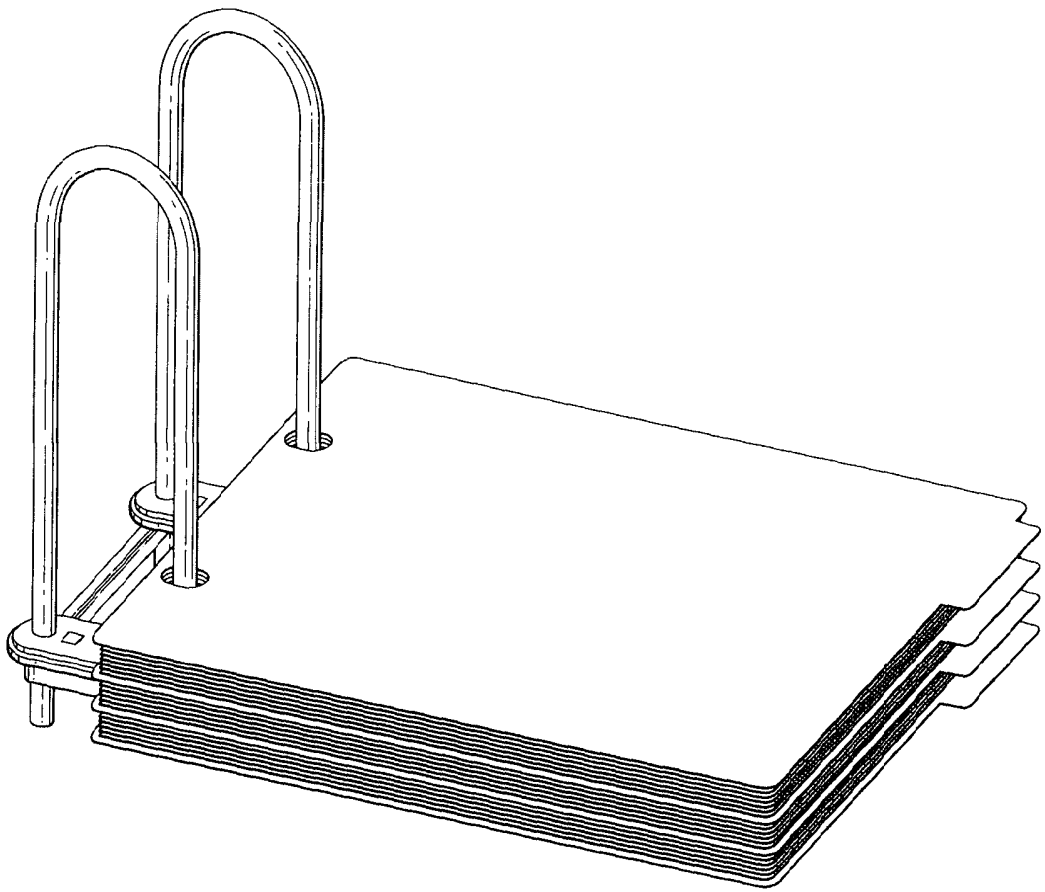
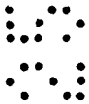
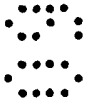


FIG. 6



Pharmaceutical Dispensing Apparatus

This invention relates to a pharmaceutical dispensing apparatus. In particular, but not exclusively, it relates to apparatus for storing and dispensing medicaments such as tablets or capsules for use by one or more individuals over a period of time, whereby the medicaments are separated into individual doses to be taken at specific time periods or specific times over a certain period. This is to ensure that unqualified but trained care staff are able to accurately and easily identify and administer medications to elderly and sometimes confused patients.

In environments such as care homes, clinics, hospitals, and so on it is often required to store the medication for a plurality of patients and the present invention arose in attempt to provide an improved dispensing apparatus for storing medication for a plurality of patients to be taken over a period of time which provides correct doses for each patient to be taken at each specific time during a period. Whilst there are systems which provide a similar function, they have re-usable components which can then be crossed over or re-utilised in other homes increasing the RISK of spreading MRSA, CDiff and other potentially fatal infections to vulnerable patients

According to the present invention there is provided a frame for pharmaceutical dispensing apparatus comprising at least two arcuate members and a base, the arcuate members being arranged to be supported in the base in an upright position such that blister packs and/or patient information leaflets having two or more slots can be removably retained by the upright frame members such that a stack of blister packs can be retained and freely dispensed from.

The frame is most preferably of a plastics material which is disposable and/or most preferably recyclable. The blister packs are also most preferably of a disposable or more preferably recyclable material.

This is particularly advantageous in environments such as hospitals where the spread of infection is to be avoided since the frame is intended to carry, perhaps, a months

worth of pharmaceuticals to be dispensed to a plurality of patients and will typically be sent, as a package, with the pharmaceuticals within the package from a supplier, pharmacy, etc to a care home, hospital or similar environment. By making the frame and all components which are located within it (such as blister packs) either disposable or recyclable then once the month's (or other periods) supply has been exhausted, the entire package, less the dispensed pharmaceuticals, can then be simply disposed of or transmitted to a recycling centre where the recyclable material of the frame can be melted down and used to make other products and a completely new, fully sterile, apparatus can then be forwarded to the care home, hospital, etc with the next month's supply, and so on.

With the presently available arrangements for transmitting a month's worth of doses, a frame is used which is generally of metal or other material which is not economically or practically disposed of, or recycled, and therefore this requires cleaning after each month. This practice simply does not happen in the current pharmacy sector. Equipment is neither cleaned nor sterile via an auto-clave, therefore if parts are cannibalised from one care home to be utilised in another, you have created a medium by which the bacteria can be transmitted to an infection free care home, from a home with an active infection. It is much more hygienic to completely dispose of and replace a simple cheap apparatus than to clean one, with the possible risks that cleaning may not be 100% effective in destroying all known pathogens. The disposable system stops the possibility of having dirty, ineffectively cleaned apparatus being a crossed between care homes or providing a medium by which the infection is carried from one site to another.

The arrangement of the upright members and frames is similar to that of a conventional 'ring binder' having an arched structure for removably retaining a number of sheets or generally sheet-like packs. The frame may be of UPVC material.

In a further embodiment, there is provided dispensing apparatus comprising a frame as described above and one or more blister packs, each blister pack comprising a plurality of blisters for receiving doses or pharmaceuticals such as tablets and being sealable in a fashion that pushing against the pharmaceuticals causes the seal to rupture to dispense a pharmaceutical product, each blister pack having a slot for being received by a frame

member and a cup which forms a resiliently deformable slot of lower width than the width of a frame of a upright frame member for enabling the blister pack to be retained by or freed from the frame member.

Preferably, the blisters are arranged in rows of seven (for a weeks dispensing) and with a number of columns relevant to the number of doses to be taken per day, typically four. They may be of selectable depth and/or other dimensions.

A blister pack may be sealed by an adhesive sheet mounted on the rear thereof which is of such a material that depressing a pharmaceutical product within a particular blister causes the adhesive sheet to rupture to release the product. The adhesive sheet may be coloured a different colour to the blister pack. The blister pack may most preferably be transparent such that the contents within each blister can be seen.

Preferably, the apparatus further comprises one or more information sheets, leaflets or cards which can separate blister packs or groups of blister packs and these can be used, for example, to identify each particular patient, type of medication or for other uses. This will have a similar mechanism to that of the blister pack to enable its retaining and removal from the frame.

Most preferably, there are two upright frame members and each blister pack and/or additional sheet has two slots spaced the same distance apart as the upright frames are spaced on the base. There may be more than two upright frame members.

- The colour of the frame may vary to help ease of identification & dispensing and also to minimize errors, e.g. colour A for morning, colour B for midday etc.

The colour of the blister and/or the plastics seal may vary for the same reasons.

The components may of course be of different size to those shown, or different relative sizes.

The present invention further provides dispensing apparatus, or a frame for dispensing apparatus, comprising any more of the novel features or combinations of features disclosed herein.

Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 shows a frame;

Figure 2 shows an upright member forming part of the frame;

Figure 3 shows a base;

Figure 4(a) to (c) show one embodiment of a blister pack;

Figure 5(a) to (c) show a further embodiment of a blister pack; and

Figure 6 shows a dispensing apparatus including a frame, a plurality of blister packs and information card.

Figure 1 shows a frame for a dispensing apparatus. Advantageously, this is made of a plastics material such as a UPVC or, more preferably, of a recyclable plastics material.

The frame, as shown in Figure 1, includes a base 1, which is formed of respective end parts 2, 3 and side parts 4, 5 to form a generally rectangular hollow structure. One or more strengthening cross members 6, 7 may also be used. In practice, the base 1 will generally be formed as a single plastics item, typically by moulding or otherwise. Two enlarge plinth portions 8, 9 are formed towards one end each being elongate with curved ends in the preferred embodiment and arched framed support members 10, 11, generally formed separately are arranged to be located upon suitable holes 12. The plinth parts each include an upturned lip 13 (shown in Figure 3). Each of the frame parts 10 and 11 have a generally arched construction and are again formed of a disposable or preferably recyclable plastics material as a one piece item. They each include a tubular elongate part comprising a first straight section 14, an arched section 15 subtending an angle of 180° and a second straight section 16 spaced from first straight section 14. The straight sections 14 and 16 terminate at a generally elongate base portion 17 having straight sides and arched ends, as is shown in Figure 1 and which fits within the lips 13 of the base 3. Bosses or protrusions 18, 19, in line with sections 14 and 16 respectively, extend from the other side of base

portion 17 and these are used as pins to locate the frame members into the slots 12 within the base such that the base portions 18 fit within lip 13 and thus to securely fix the frame member, which are now upright frames, on the base 1. They may also be glued into place or otherwise permanently or semi-permanently affixed. Thus, in use, and when assembled the frame comprises a generally horizontal base (assuming the base is placed upon a horizontal surface) and generally vertically upright frame members 10 and 11 which are each arched.

A plurality of blister packs and accompanying literature are then mounted on the frame when used. Figures 4 and 5 show two typical blister packs. Each one, as shown in Figure 4(a) is typically generally rectangular in shape although it may be of other shape and dimensions than shown. Each blister pack 20 comprises a plurality of raised blisters 21 of suitable size to receive one or more pharmaceutical products in the form of tablets, capsules or similar. The blister pack may be made of a suitable plastics material, typically a fairly lightweight, disposable and/or recyclable material and are preferably transparent or translucent such that the contents of each blister can be easily viewed. One or more strengthening ribs 22 may be provided. Each blister pack comprises two slots 23, 24 of suitable size to receive parts 14 of each respective frame and which are spaced apart the same distance as the frames 10 and 11 are spaced on the base 1. The slots 22 are therefore of slightly greater size than the diameter of the tubular parts 14. Cuts 23 are then made between the slots (which are provided towards one short end of the rectangular blister) and that short end and these are used to enable the blister pack to be affixed in place relative to the frame. The plastics material is suitably flexible that in order to affix a blister pack this can simply be pushed against a pair of frame members and the plastics material 'gives' or resiles to enable the frames to be pushed through the cuts and into the slots. Alternatively, slots of a finite width may be provided joining the retaining slots 22 to the edge of the blister pack the plastics material having a natural resilience which enables the slots to widen temporarily to pass the frame. In order to remove a blister pack, it is simply necessary to pull the blister pack in a direction away from the frame and this again causes the plastics to deform slightly to enable removal.

The difference between the embodiments of Figure 4 and Figure 5 is that the one of Figure 4 has relatively shallow blisters 21 (as shown Figures 4(c) and 4(b)) whereas the embodiment of Figure 5 has deeper blisters. In practice, blister packs having several different depths or indeed difference sizes (width, length, depth) of blisters may be used on the same apparatus for dispensing to different patients or dispensing different medicaments. Clearly, more tablets or capsules can be retained within a larger blister.

The blisters are most preferably arranged in groups (eg rows and columns) which have several blisters in one dimension (eg equivalent to one weeks worth) and a number in the other dimension corresponding to the number of doses to be dispensed each day, typically four as shown in Figures 4 and 5.

On the rear of the blister pack, a thin plastics or other sealing material is applied over at least the blistered area and this most preferably applied simply by adhesion. It may have adhesive applied over the whole of the backing sheet or only over those areas or some of those areas which are not in contact with the blister. In order to dispense a product, pressure is applied from the front of each blister which causes any pharmaceutical products within the blister to rupture the backing material and therefore enable the product to be removed. The backing material should therefore be of sufficient properties to enable it to be easily ruptured when used in this manner. Materials of this nature will be apparent.

Figure 6 shows a whole assembly as will be provided by a pharmacy typically to a care home or clinic, hospital, etc. This comprises the frame which is preloaded with a plurality of blister packs, each having the required medication for a particular patient and, spaced between blister packs, or between groups of blister packs, for one or more patient information leaflets 30, dispensing card or similar, which again have slots and/or cuts and are of similar size to the blister packs to enable them to be affixed in the stack on the frame.

It will be seen that it is easy for a carer to look through and choose a required dispensing pack simply by flipping the blister packs and/or information leaflets, cards, etc over the arched portion 11 of the frame until he reaches the required the pack which he can then simply remove from the frame in order to dispense medicaments. This can then be

easily pushed back onto the frame. The method of retention and product selection is thus very similar to that of a typical arched folder used for storing paper.

Once the month's supply is exhausted, the carer simply returns the whole pack to the supplier and is given a new pack bearing a month's supply of personalised medicament doses.

Claims

1. A frame for pharmaceutical dispensing apparatus comprising at least two arcuate members and a base, the arcuate members being arranged to be supported in the base in an upright position such that blister packs and/or patient information leaflets having two or more slots can be removably retained by the upright frame members such that a stack of blister packs can be retained and freely dispensed from.
2. A frame as claimed in claim 1, wherein each arcuate member forms an arch.
3. A frame as claimed in claim 2, wherein each arcuate member includes a first straight section, an arched section subtending an angle of 180° and a second straight section spaced from said first stretched straight section.
4. A frame as claimed in any preceding claim formed of a plastics material.
5. A frame as claimed in any preceding claim formed generally in the manner of a “ring binder”.
6. Dispensing apparatus comprising a frame as described above and one or more blister packs, each blister pack comprising a plurality of blisters for receiving doses of pharmaceuticals such as tablets and being sealable in a fashion that pushing against the pharmaceuticals causes a seal to rupture to dispense a pharmaceutical product, each blister pack having a slot for being received by a frame member and a cut which forms a resiliently deformable slot of lower width than the width of a frame of an upright frame member for enabling the blister pack to be retained by or freed from the frame member.
7. Dispensing apparatus as claimed in claim 6, wherein the blisters are arranged in rows of seven.

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8. Apparatus as claimed in claim 6 or 7, wherein each blister pack is sealed by an adhesive sheet mounted on the rear thereof which is of such a material that depressing a pharmaceutical product within a particular blister causes the adhesive sheet to rupture to release the product.

9. Apparatus as claimed in claim 8, wherein the adhesive sheet is a different colour to the blister pack.

10. Apparatus as claimed in any of claims 6 to 9, wherein the blister pack is transparent.

11. Apparatus as claimed in any of claims 6 to 10, further comprising one or more information sheets, leaflets and/or cards which can separate blister packs or groups of blister packs.

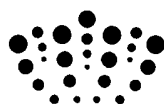
12. A frame as claimed in any of claims 1 to 5 or an apparatus as claimed in claims 6 to 9, wherein each blister pack and/or additional sheet has two slots spaced the same distance apart as the spacing of the upright frames on the base to enable the slot to locate on the frames.

13. A plurality of frames as claimed in claims 1 to 5 or an apparatus as claimed in claims 6 to 12, including frame and/or blister packs of at least two different colours.

14. A frame substantially as hereinbefore described with reference to, and as illustrated by, the accompanying drawings.

15. Dispensing apparatus substantially as hereinbefore described with reference to, and as illustrated by, any of the accompanying drawings.

16. A blister pack substantially as hereinbefore described with reference to, and as illustrated by, the accompanying drawings.



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Application No: GB0808652.2

Examiner: Emily Jones

Claims searched: 1-5 and 14

Date of search: 25 August 2009

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-5	GB2411165 A (ASLETT et al) Especially note Figures 4-6, pages 13-15 and claim 12
X	1-5	(SCHUTTEN) "Patient Advocacy and Education", [online] 2005, available from: http://www.identimed.com/articles/PR-IdentiMed-July192005.pdf Accessed 25/08/09 This is product information relating to the product featured in SCHUTTEN patent citation below.
X	1-5	US2002/100700 A1 (SCHUTTEN) See whole document
X	1-5	GB2364514 A (DELEFORTRIE) See Figures.
A	-	AU2004100732 A4 (MANREX PTY LTD) See whole document

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^X :

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Worldwide search of patent documents classified in the following areas of the IPC

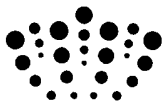
A61J; B65D

The following online and other databases have been used in the preparation of this search report

WPI, EPODOC, Internet

International Classification:

Subclass	Subgroup	Valid From
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Subclass	Subgroup	Valid From
A61J	0001/03	01/01/2006
B65D	0083/04	01/01/2006