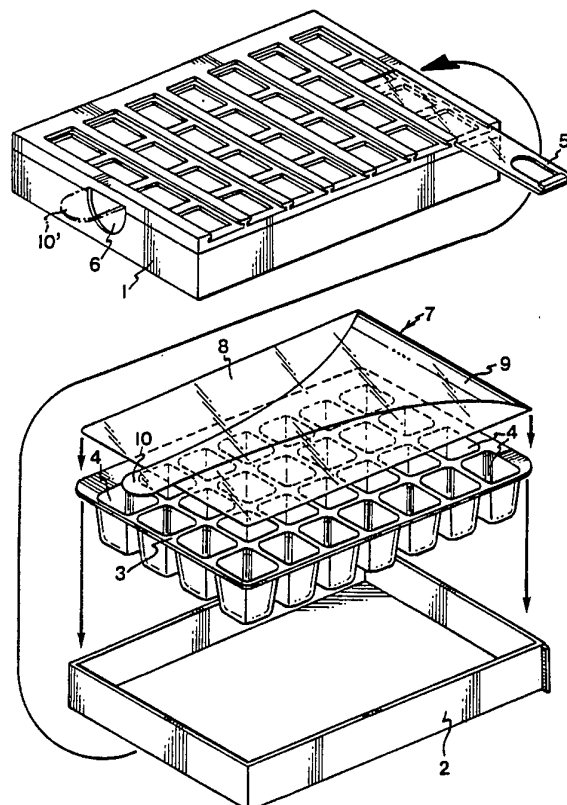


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(54) Title: DISPENSER FOR MEDICAL PREPARATIONS AND INSERT THEREFOR**(57) Abstract**

A dispenser for medical preparations comprises a rectangular box (1) which releasably accommodates an insert (3) containing a series of countersunk compartments (4) for receiving the medical preparations, the box having a top cover with slidable shutters (5) adapted to be opened at least partially to permit access to the contents of the respective compartments, a protective lid (7; 7'') being removably arranged on the top of the insert and covering the compartments and being openable to permit the above-mentioned access. The lid (7; 7'') can be peeled off from the insert (2) and has a grip portion (10; 10'') that can be seized externally of one side of the box to permit peeling off the lid through an opening or a slot (6; 6'') provided in said box side.



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DISPENSER FOR MEDICAL PREPARATIONS AND
INSERT THEREFOR

The invention relates to a dispenser for medical pre-
5 parations and an insert therefor.

Over the past 10-15 years, dispensers for medical
preparations consisting of a box which releasably accom-
modates an insert with a number of compartments, have
found extended employment. The compartments contain medi-
10 cal preparations, "pills", and are arranged in a specific
manner, e.g. in columns and rows, so that the patient or
the nurse can easily find one or more medical preparations
that the patient is to take at a predetermined point of
time. The box may, for example, have markings indicating
15 the day of the week and the hour, and can be opened com-
pletely or partially to permit access to the preparations
in the desired compartments. The box can be opened by
means of shutters arranged in the top of the box. Exam-
ples of such dispensers are described in EP-250 636, US-
20 4,038,937, US-4,062,445 and FR-2,575,730.

The general trend in this field goes towards scrap-
ping the insert once it has been emptied of its contents
and removed from the box. Then, a new insert with medical
preparations, prepared e.g. at a chemist's or a hospital,
25 is inserted in the box.

WO92/02202 describes a dispenser where the insert is
delivered with a sheet fixed to it and covering the com-
partments therein. The sheet may be perforated, and the
perforation should, with the insert placed in the box and
30 a shutter opened, be broken to permit access to the prepa-
ration/preparations in the desired compartments. The sheet
may alternatively be peeled off and folded back before the
insert is inserted in its box.

The problem encountered in the first-mentioned embo-
35 diment is that the sheet portion forming a cover on its
compartment will prevent or complicate the removal of the
preparation/preparations from the compartments after the

perforation has been broken by puncturing the sheet portion. The problem encountered in the second embodiment is that when the sheet is peeled off from the insert, the forces associated therewith may easily cause the insert to tremble, making the preparations leave their compartments so as to either drop to the floor or jump into a wrong compartment. This is especially the case with older people who often have shaky hands. The trembling effect is often aggravated by the insert often being of a thin, flexible plastics material.

The object of the invention is to find a solution to this problem.

This object is achieved by a dispenser and an insert according to the claims.

One embodiment of the invention will now be described in more detail with reference to the accompanying drawings. Fig. 1 is an exploded view of a dispenser according to US-4,038,937 with a first embodiment of the inventive concept applied to it. Fig. 2 shows a second embodiment of the inventive concept, and Fig. 3 shows a broken-way, modified part of Fig. 1.

The prior-art dispenser of US-4,038,937 has a box 1, a tray 2 and an insert 3 for receiving several (7x4) open-top compartments 4 for receiving medical preparations. The insert 3 fits in the tray 2 which is insertable, together with the insert, into the box through one end thereof (the right-hand one in the Figure), whereupon access to the preparations in the compartments is offered after shutters 5 on the top of the box have been slid open. These components consist of plastics.

Opposite the tray-receiving end, the circumferential wall of the box 1 has a through opening 6 which is used for pushing, with a finger, the tray (with the insert) out of the box for reloading it with a new insert containing medical preparations.

The above summary of the known dispenser suffices for an understanding of the invention, which will now be exemplified in more detail.

According to the invention, the insert 3 is provided, e.g. at a chemist's where the insert has been filled with medicine, with a sheet for sealing it. This sheet is a pliable doubled strip 7 consisting e.g. of a viscose sheet or a suitable plastics material, whose lower ply 8 is attached all round the upper edge portion of the insert. The upper ply 9 of the strip is lying loosely on the lower ply and is tapering so as to terminate at its free end in a finger grip portion 10, e.g. for the thumb and the forefinger. This grip portion extends beyond the insert and is provided for peeling off the sheet or strip from the insert as described hereinafter. The position of the grip portion is such that it can be reached and seized through the opening 6, or it extends through the opening 6 when the sealed insert 3 with its tray 2 has been inserted in the box with the side of the insert adjacent the grip portion coming first. In order that the grip portion should be automatically guided through the opening 6 after said insertion of the insert into the housing, it may be provided with a stiffened portion (see dash-dot line at grip portion 10').

The sealed insert 3 placed in the box is opened by pulling the grip portion 10 so that the connection between the lower ply 8 and the top of the insert is broken as the strip is being peeled off through the opening 6. In this manner, the entire strip can be peeled off from the insert and drawn out of it.

The connection between the lower ply 8 of the strip and the insert 3 can be freely selected by a skilled person, depending on the material of the strip and the insert and the desired strength. If the materials are thermoplastics, it is preferred, for example, to employ continuous welding or spot welding. Joints can also be provided

between the lower ply 8 and the upper edge portions of the compartments, if so desired.

In a modification, the upper ply 9 can be loosely attached in one or some points to the lower ply 8, suitably adjacent the grip portion 10, which ensures safer guiding of the grip portion up to and through the opening when inserting the insert in the box.

In a further embodiment shown in Fig. 2, the insert 3 has a rectangular sliding lid (slide) 7" of relatively rigid plastics material and shaped with inwardly folded edges on the two long sides and one short side, where the edge has been provided with a projecting tab 10". On the opposite short side, the lid 7" and the insert 3 are attached to each other by an adhesive strip 12, a "seal", which on the upper side may have medical directions, and which serves to prevent the lid 7" from sliding off the insert and to make the insert and the lid tamperproof. This seal is broken, e.g. with the nail, before or after the insert 3 with the lid 7" applied thereon has been inserted in the box 1 placed on a tray 2, with the same orientation as in Fig. 1. Alternatively, only the long sides may be provided with the inward folds, in which case also the other short side can be attached to the box by means of an adhesive strip. To permit removing the lid 7" from the box by pulling the grip portion 10", there are provided at the top of the corresponding short side of the tray 2 a recess and a slot 6", see Fig. 3, in the corresponding short side of the box, the recess and the slot having such dimensions that the lid 7" can be pulled out therethrough without any difficulty.

It is understood that the inventive concept is applicable to other types of dispensers than that illustrated, e.g. also to trayless dispensers, see EP-250 636 and SE-9101862.2, and such dispensers where the boxes are adapted to receive an insert through an open top which is closed by means of a lid hingedly connected to the box. According to the invention, such boxes (and/or their lids)

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are formed with an opening or a slot for reception and passage of the grip portion 10, 10', 10". Such an opening or slot etc. may possibly be dispensed with in boxes provided with pivotal lids and sheet-equipped inserts: here, 5 the grip portion may extend out of the box in the gap between the top of the box and the lid. It is understood that the opening/slot 6, 6", also in the trayless designs according to EP-250 636 and SE-9101862.2, is arranged in the box side opposite to the openable side.

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CLAIMS

1. A dispenser for medical preparations, comprising
5 a rectangular box (1) releasably accommodating an insert
(3) containing a series of countersunk compartments (4)
for receiving the medical preparations, said box having
a top cover with slidable shutters (5) adapted to be
opened at least partially to permit access to the contents
10 of the respective compartments, a protective lid (7; 7")
being removably arranged on the top of the insert and
covering the compartments and being openable to permit
said access, c h a r a c t e r i s e d in that the lid
(7; 7") can be peeled off from the insert (2) and has a
15 grip portion (10; 10") which can be seized externally of
one side of the box to permit peeling off the lid through
an opening or a slot (6; 6") in said side of the box.

2. A dispenser as claimed in claim 1, c h a r a c -
t e r i s e d in that the lid (7) consists of a pliable
20 protective sheet in the form of doubled strip (7) whose
lower ply is fixed to the upper edge of the insert (2) and
whose upper ply (9) is lying loosely on or is but loosely
fixed to the lower ply (8) and is provided at its free end
with said grip portion (10; 10') which extends outside the
25 box or can be pulled outside the box.

3. A dispenser as claimed in claim 1, c h a r a c -
t e r i s e d in that the lid (7") is a slide which is
provided along three edges or along two opposite edges
with an inward fold and whose third edge, optionally pro-
30 vided with an inward fold, exhibits said grip portion
(10"), said inward folds gripping the upper corresponding
edge portions of the insert (3).

4. An insert for use in a dispenser for medical pre-
parations, said insert containing a series of countersunk
35 compartments (4) for receiving the medical preparations,
and having fixed to its top a pliable protective sheet,
c h a r a c t e r i s e d in that the protective sheet

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consists of a doubled strip (7) whose lower ply (8) is fixed to the upper edge of the insert and whose upper ply (9) is lying loosely on or is but loosely fixed to the lower ply (8) and has at its free end a grip portion (10) which extends outside the periphery of the upper edge of the insert.

5. An insert for use in a dispenser for medical preparations, the insert (3) being rectangular and containing a series of countersunk compartments (4) for receiving the medical preparations, and a lid having inwardly-folded edge portions along two opposite sides or along three sides being provided on the top of the insert and being displaceable therealong, said inwardly-folded edge portions gripping the upper, corresponding edge portions of the insert, c h a r a c t e r i s e d in that the edge portion of the lid having no inward fold or at least one of the edge portions having no inward fold has a seal in the form of an adhesive strip attached to the insert and its lid.

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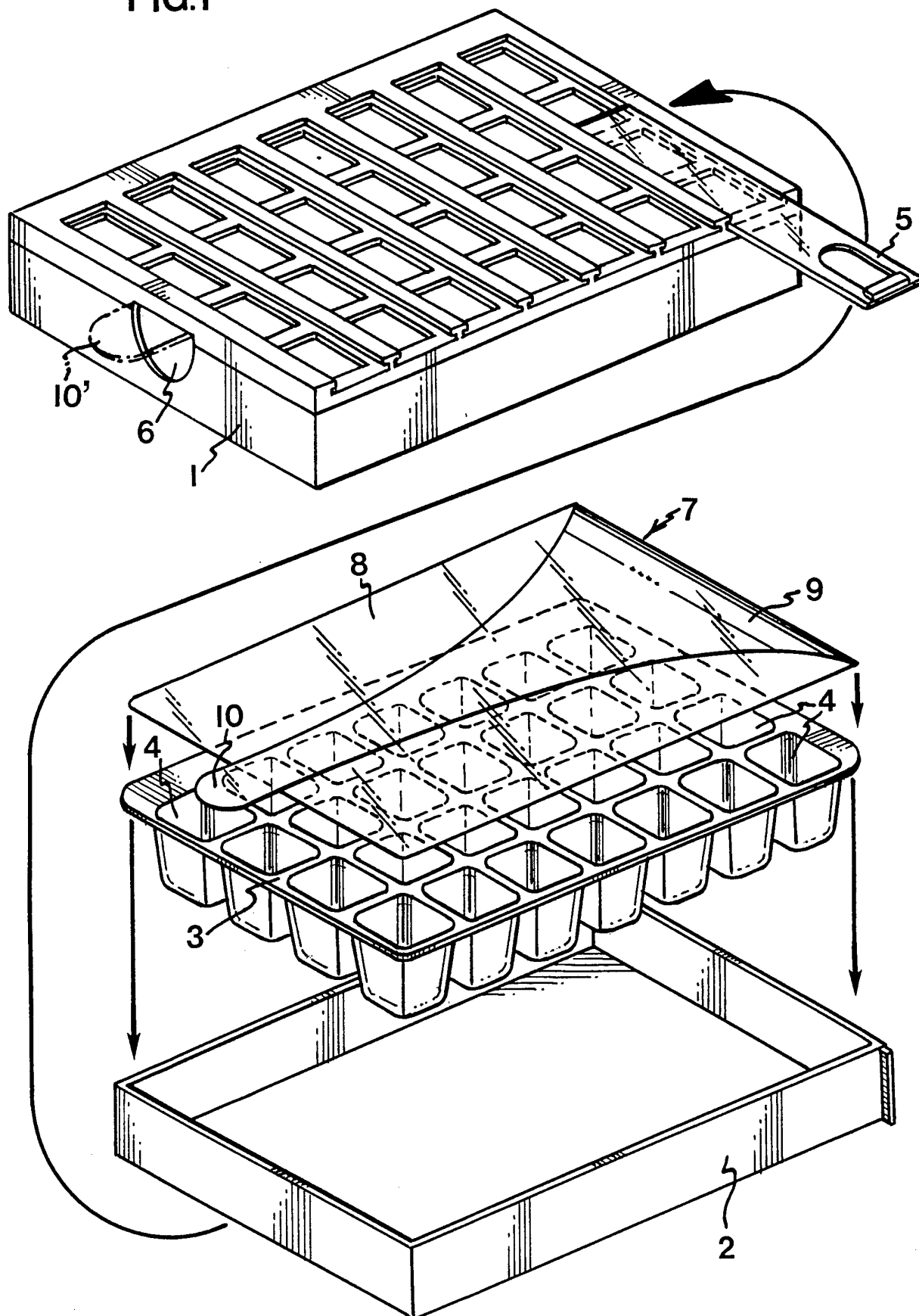
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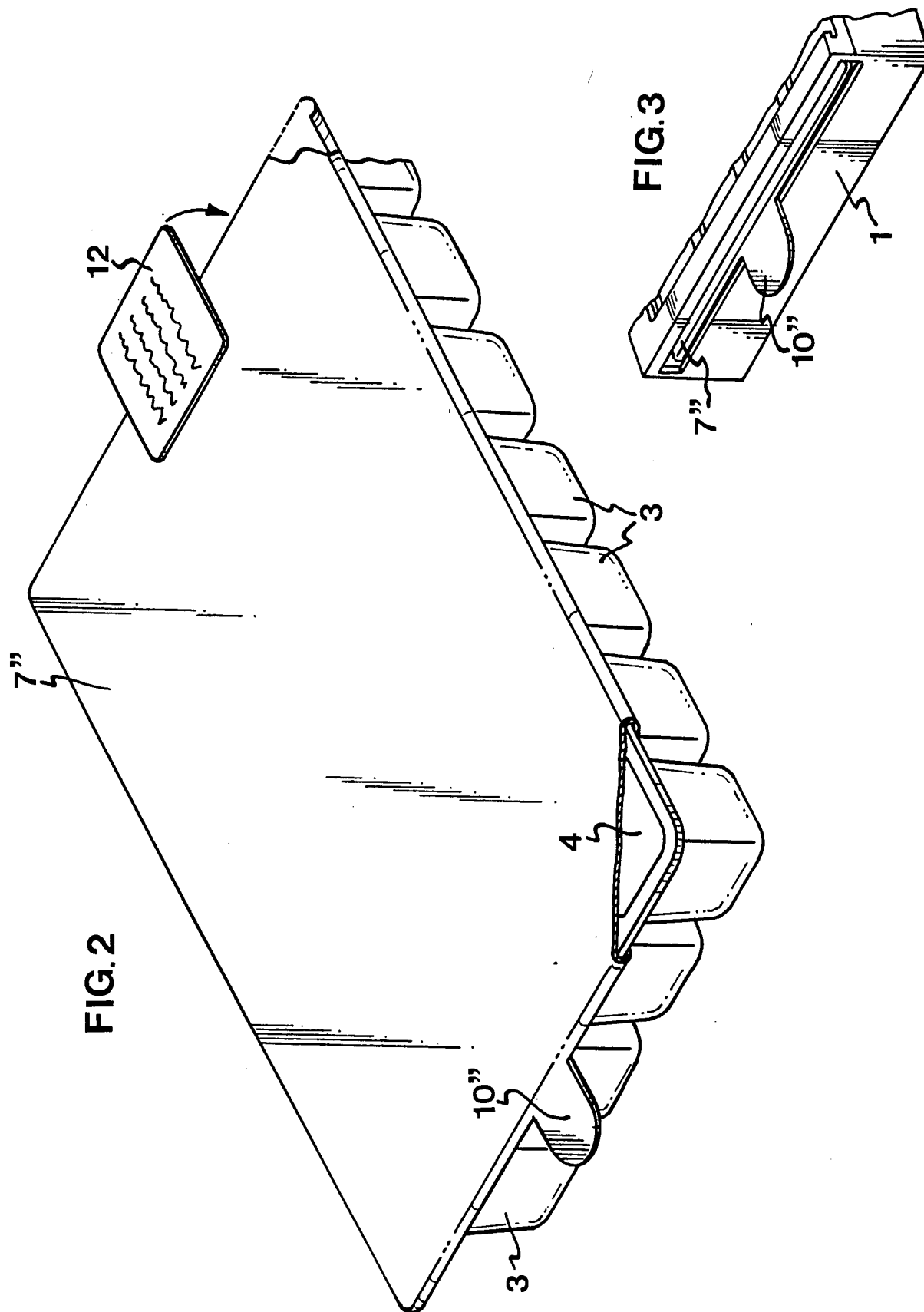
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1/2

FIG. 1





INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 93/00891

A. CLASSIFICATION OF SUBJECT MATTER

IPC5: A61J 1/03, B65D 83/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC5: A61J, B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 4038937 (MÖE), 2 August 1977 (02.08.77), figure 5, claims 1-24 --	1-5
A	DE, B2, 1909932 (ORTHO PHARMACEUTICAL CORP.), 12 May 1977 (12.05.77), figure 1, claim 1 --	1-5
A	WO, A1, 9202202 (SURGI-CHEM LIMITED), 20 February 1992 (20.02.92), figure 1, claims 1-9 -- -----	1-5

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

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20 January 1994

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INTERNATIONAL SEARCH REPORT
Information on patent family members

27/11/93

International application No.
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Patent document cited in search report		Publication date	Patent family member(s)		Publication date
US-A-	4038937	02/08/77	NONE		

DE-B2-	1909932	12/05/77	BE-A-	729485	08/09/69
			BE-A-	729486	08/09/69
			CH-A-	490241	15/05/70
			CH-A-	498754	15/11/70
			DE-A-	1909933	16/10/69
			FR-A-	2003530	07/11/69
			FR-A-	2003532	07/11/69
			GB-A-	1208720	14/10/70
			GB-A-	1236675	23/06/71
			NL-A-	6903006	10/09/69
			NL-A-	6903007	10/09/69
			SE-B-	354964	02/04/73
			US-A-	3527190	08/09/70

WO-A1-	9202202	20/02/92	AU-A-	8305991	02/03/92
			CA-A-	2088594	03/02/92
			EP-A-	0541643	19/05/93
