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(54) **BLISTER PACKAGE STIFFENING**

VERSTEIFUNG FÜR BLISTERVERPACKUNGEN

RIGIDIFICATION D'EMBALLAGE-COQUE

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(56) References cited:
WO-A1-96/07601
WO-A1-2007/141869
DE-A1- 3 607 012
US-A- 4 753 352
US-A1- 2004 188 315

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EP 2 435 334 B1

Description

Field of the invention

[0001] THIS INVENTION relates to enhancing the stiffness of a blister package and is more specifically concerned with stiffening a blister package having sealed blisters between which air can pass by way of ducts extending between them.

State of the art

[0002] Patients required to take prescribed medication doses at pre-determined times of the day are often provided with a blister package containing the doses. The package is constructed from a transparent blister sheet having blisters which individually contain the medication which the patient is required to take at a particular time on a particular day. The medication doses are held in the blisters by a frangible backing sheet, such as a thin metal foil. The blisters are transparent and have a relatively flexible front face so that finger pressure applied to the front face of a selected blister presses the doses inside it downwardly and against the backing sheet with sufficient force to cause the backing sheet to rupture. Such rupturing allows the doses to be released from the blister so that they can be collected for subsequent administration to the patient.

[0003] Elderly patients and those having relatively weak fingers sometimes have difficulty in exerting enough thrust on the front face of the blister to push the medication doses within it against the backing sheet to rupture it. This problem is partially caused by compression of a cushion of air held inside the blister resisting the downward movement of the front face of the blister. To overcome this difficulty we have created a new form of blister sheet which has pairs of parallel, narrow ducts communicating at their pairs of ends with respective blisters. An increase in air pressure inside one of the blisters is then dissipated by air flowing through the duct or ducts into one or more neighboring blisters which are preferably designed to expand slightly to absorb the additional air. This new form of blister sheet is described and claimed in our co- pending Australian patent-of-addition application No. 2009202203 filed on even date herewith.

[0004] It is customary practice to stiffen and protect a blister package loaded with medication doses. This may be achieved by covering the exposed surface of the package from which the blisters protrude, with a stiff panel made of plastics, card or some other material which will enhance the stiffness of the package which may also protect it from subsequent damage. The panel may also be marked with legend to0 denote the times of day and the days of the week in which particular blisters are to be opened. Such marking cannot be easily carried out on the blister sheet itself.

[0005] In some situations, such as in nursing homes, it is preferable to trap a loaded blister package inside a stiff plastics folder so that it can be easily accessed by authorized personnel entrusted with the responsibility of administering the medication doses to a ,. particular patient. However, if the patient is mobile it is usually more convenient to provide the patient with a light, cheap and easily-portable blister package which only has to be used once and is still strong enough to withstand normal day-to-day handling by the patient.

[0006] Document US 2004/0188315 A1 discloses a blister package according to the preamble of the claim 1.

Summary of the invention

[0007] In accordance with the present invention, there is provided a blister package comprising a blister sheet having an array of manually-depressible blisters on one face, and a planar stiffening panel formed with cuts extending through its thickness, the cuts framing windows through which the blisters of the blister sheet protrude, characterised in that the blister sheet is formed with channel-shaped ducts each connected at each of its two ends to respective adjacent blisters; pairs of opposed spaced fingers are provided in the stiffening panel that define openings between respective windows receiving the channel-shaped ducts of the blister sheet, and the stiffening panel is adhesively attached to coplanar lands of said one face of the blister sheet.

Preferred features of the invention.

[0008] In the preferred arrangement of the panel the windows are arranged in perpendicular columns and rows to provide a rectilinear array of windows. Suitably, during assembly of the blister package the face of the panel destined to lie flush against said one face of the blister package, is covered with an adhesive layer protected by a flexible cover slip which can be manually peeled off the panel prior to it being placed in its operating position against the blister package. The cuts extending through the panel do not pass through the cover slip so that when it is peeled off, portions of the panel remain adhering to the cover slip to expose the windows and openings in the panel.

[0009] The panel may be made from card or board or even plastics. Being planar it allows legend or other markings to be provided on its exposed face. As the panel can now lie flush against the sheet it can be firmly secured to it throughout its area. Contact between the panel and the sheet is thus uniform and not impaired in any way by the existence of the ducts extending between the blisters.

[0010] In the preferred arrangement the windows are rectangular and the openings are formed between the shorter sides of the blisters flanking the two sides of the strip.

Brief description of the drawings

[0011] The invention will now be described in more de-

tail, by way of example, with reference to the accompany drawings, in which:

FIGURE 1 shows in plan a rectangular stiff card providing a panel having one side covered by a pressure adhesive layer protected by a manually-removable flexible cover slip which can be peeled off to expose the adhesive layer, the card being formed with thin lines of severance provided by cuts which extend through the thickness of the card but do not extend through the slip;

FIGURE 2 is a plan view of a stiffening panel as seen after the adhesive layer has been exposed by removal of the cover slip which takes with it adhering portions of the panel to expose the windows and openings;

FIGURE 3 shows an unloaded blister sheet having a rectilinear array of blisters and formed with pairs of parallel ducts which open at their ends into the cavities of respective blisters; and,

FIGURE 4 shows the combination of panel and blister sheet which is formed when the panel is pressed down to adhere onto coplanar lands of the blister sheet which extends around and between the blisters.

Description of preferred embodiment

[0012] Figure 1 shows a rectangular stiff card 1 backed by a layer of a pressure-sensitive adhesive (not shown) which is covered by a protective cover slip (also not shown). The adhesive layer is pressure sensitive in the sense that when it is exposed to air by peeling off the slip, it will adhere to virtually any surface onto which it is pressed without being heated.

[0013] The card alone is cut by slits through its thickness along closed outlines 3 which define separate portions 4 of the card which are not required. The remainder 5 of the card 1 provides the stiffening panel 6 of the combination of blister sheet and stiffening panel shown in figure 4. The stiffening panel has the shape illustrated in figure 2. The portions 4 comprise closed bodies and remain adhering to the protective slip when it is peeled off the back of the card 1.

[0014] The panel 6 is formed with a rectilinear array of windows 4 as shown in figure 4. These windows are arranged in horizontal rows separated from one another by thin unbroken strips 8. the windows are also arranged in vertical columns separated from one another by interrupted strips 9. These provide two opposed and spaced strip portions or fingers between each pair of windows in each horizontal rows extend from the strips 9. The ends of the fingers are spaced from one another to provide between them a gap 10.

[0015] As shown in figures 1 and 2, one end-portion 11 of the panel is formed with a large window 11 for displaying personal details of a patient together with details of the medication doses which a doctor has prescribed and which are contained in the cavities of blisters of a blister sheet 20 shown in figure 3 and which is to be stiffened by an adhering panel 6 as shown in figure 4.

[0016] The end portion 11 of the panel 6 is marked with a line 14 of small slits shown in figure 2 to facilitate its folding into two parts 15 and 16 which can be folded together beyond the end of the blister sheet to bring two holes 13 on each of the parts 15 and 16 into registration with one another. Slits 17 extending between the registering holes enable the panel with an adhering blister to be easily hung and removed from hooks (not shown).

[0017] The unloaded blister sheet is shown in figure 3. It has a rectilinear array of rectangular blisters 21 positioned to match the positions of the windows of the panel and so shaped that each blister can protrude through a respective window of the panel. Each pair of blisters in a horizontal row have their cavities interconnected by a pair of parallel and relatively narrow ducts 22 as shown in figure 4. These ducts are conveniently of the design described and claimed in our above-mentioned Australian co-pending patent-of-addition application. Likewise the blister sheet may also be of the design described and claimed in said patent-of-addition application.

[0018] After the cavities of the blister sheet have been loaded with doses of medication and sealed, the stiffening panel 6 with exposed adhesive layer is placed over the face of the blister sheet from which the blisters protrude, and pressed down so that it adheres to the coplanar lands of the blister sheet. The gaps 10 in the vertical strips 9 provide channels through which the ducts 22 in the blister sheet can pass in an unobstructed manner and without spoiling the flush adherence of the stiffening panel 6 to the blister sheet 20.

[0019] The thickness of the stiffening panel and the cross-sectional shape of the ducts 22 are such that the ducts do not extend above the upper surface of the stiffening panel 6 and are therefore, at least to some extent, protected by the thickness of the panel.

[0020] The result is a stiffened blister package which has the face of the stiffening panel 6 flush with the coplanar surface of the blister 20 sheet and, as is apparent from figure 4. the ducts 22 passing in an unobstructed and protected manner between the blister cavities with which they communicate.

Claims

1. A blister package comprising :

a blister sheet (20) having an array of manually-depressible blisters (21) on one face, and
a planar stiffening panel (6) formed with cuts (3) extending through its thickness, the cuts (3) framing windows through which the blisters (21)

of the blister sheet (20) protrude,
characterised in that
the blister sheet (20) is formed with channel-shaped ducts (22) each connected at each of its two ends to respective adjacent blisters (21);
pairs of opposed spaced fingers (9) are provided in the stiffening panel (6) that define openings (10) between respective windows receiving the channel-shaped ducts (22) of the blister sheet (20), and
the stiffening panel (6) is adhesively attached to coplanar lands of said one face of the blister sheet (20).

2. A blister package as claimed in Claim 1, in which the windows are arranged in perpendicular columns and rows to provide a rectilinear array of windows.

3. A blister package as claimed in claim 2, wherein the windows of the stiffening panel (6) are rectangular and the gaps (10) receiving the ducts (22) are formed between the shorter sides of the windows.

4. A blister sheet and stiffening panel as claimed in any one of the preceding claims, wherein the stiffening panel (6) is made from card or board or plastics.

Patentansprüche

1. Blisterverpackung, umfassend:

einen Blisterstreifen (20) mit einer Anordnung von manuell durchdrückbaren Blistern (21) auf einer Seite und
eine ebene Versteifungsplatte (6), die mit Einschnitten (3) ausgebildet ist, die durch ihre Dicke verlaufen, wobei die Einschnitte (3) Fenster einfassen, aus denen die Blister (21) des Blisterstreifens (20) herausragen,
dadurch gekennzeichnet, dass
der Blisterstreifen (20) mit kanalförmigen Durchführungen (22) ausgebildet ist, die jeweils an jedem ihrer beiden Enden mit jeweiligen angrenzenden Blistern (21) verbunden sind;
Paare von gegenüberliegenden beabstandeten Fingern (9) in der Versteifungsplatte (6) bereitgestellt sind, die Öffnungen (10) zwischen jeweiligen Fenstern definieren, welche die kanalförmigen Durchführungen (22) des Blisterstreifens (20) aufnehmen, und
die Versteifungsplatte (6) mit koplanaren Stegen der einen Seite des Blisterstreifens (20) verklebt ist.

2. Blisterverpackung nach Anspruch 1, bei der die Fenster in senkrechten Spalten und Zeilen angeordnet sind, um eine geradlinige Anordnung von Fenstern bereitzustellen.

3. Blisterverpackung nach Anspruch 2, wobei die Fenster der Versteifungsplatte (6) rechteckig sind und die Lücken (10) zur Aufnahme der Durchführungen (22) zwischen den kürzeren Seiten der Fenster ausgebildet sind.

4. Blisterstreifen und Versteifungsplatte nach einem der vorangehenden Ansprüche, wobei die Versteifungsplatte (6) aus Karton oder Pappe oder Kunststoff besteht.

Revendications

1. Emballage alvéolaire qui comprend :

une feuille alvéolaire (20) comportant une série d'alvéoles (21) pouvant être enfoncées manuellement sur une face, et
un panneau de rigidification plan (6) doté d'entailles (3) qui s'étendent à travers son épaisseur, lesdites entailles (3) encadrant les fenêtres à travers lesquelles les alvéoles (21) de la feuille alvéolaires (20) sont protubérantes,
caractérisé en ce que
ladite feuille alvéolaire (20) est dotée de conduits en forme de canal (22) reliés chacun à chacune des deux extrémités des alvéoles adjacentes respectives (21) ;
les paires de doigts espacés se faisant face (9) sont pourvues dans le panneau de rigidification (6) qui définissent des ouvertures (10) entre les fenêtres respectives recevant les conduits en forme de canal (22) de la feuille alvéolaire (20), et
ledit panneau de rigidification (6) est fixé de manière adhésive aux zones coplanaires de ladite face de la feuille alvéolaire (20).

2. Emballage alvéolaire selon la revendication 1, lesdites fenêtres étant agencées en lignes et colonnes perpendiculaires pour donner un groupement rectiligne de fenêtres.

3. Emballage alvéolaire selon la revendication 2, lesdites fenêtres du panneau de rigidification (6) étant rectangulaires et les espaces (10) qui reçoivent les conduits (22) étant formés entre les côtés plus courts des fenêtres.

4. Feuille alvéolaire et panneau de rigidification selon l'une quelconque des revendications précédentes, ledit panneau de rigidification (6) étant fabriqué à partir de papier, de carton ou de plastique.

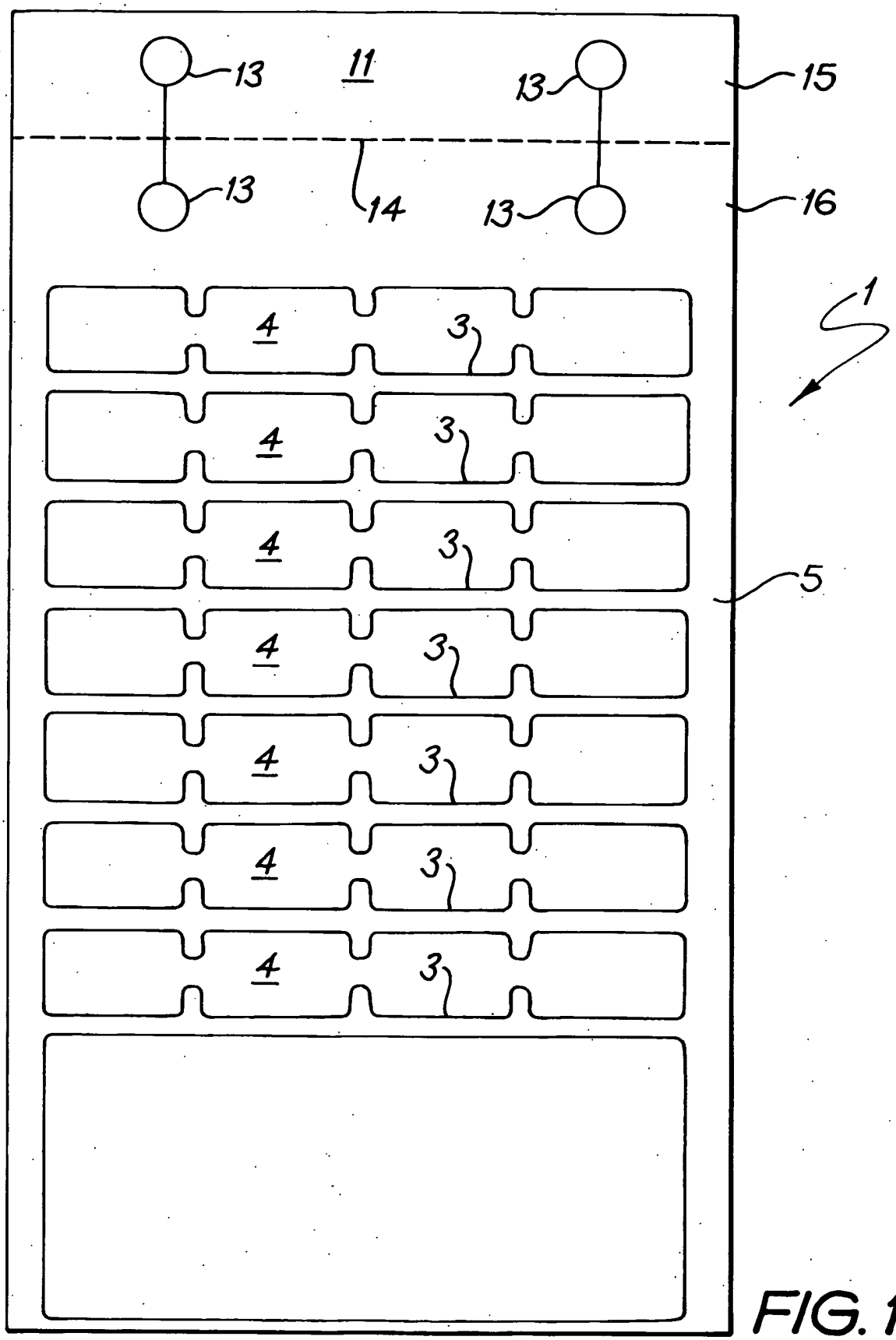


FIG. 1

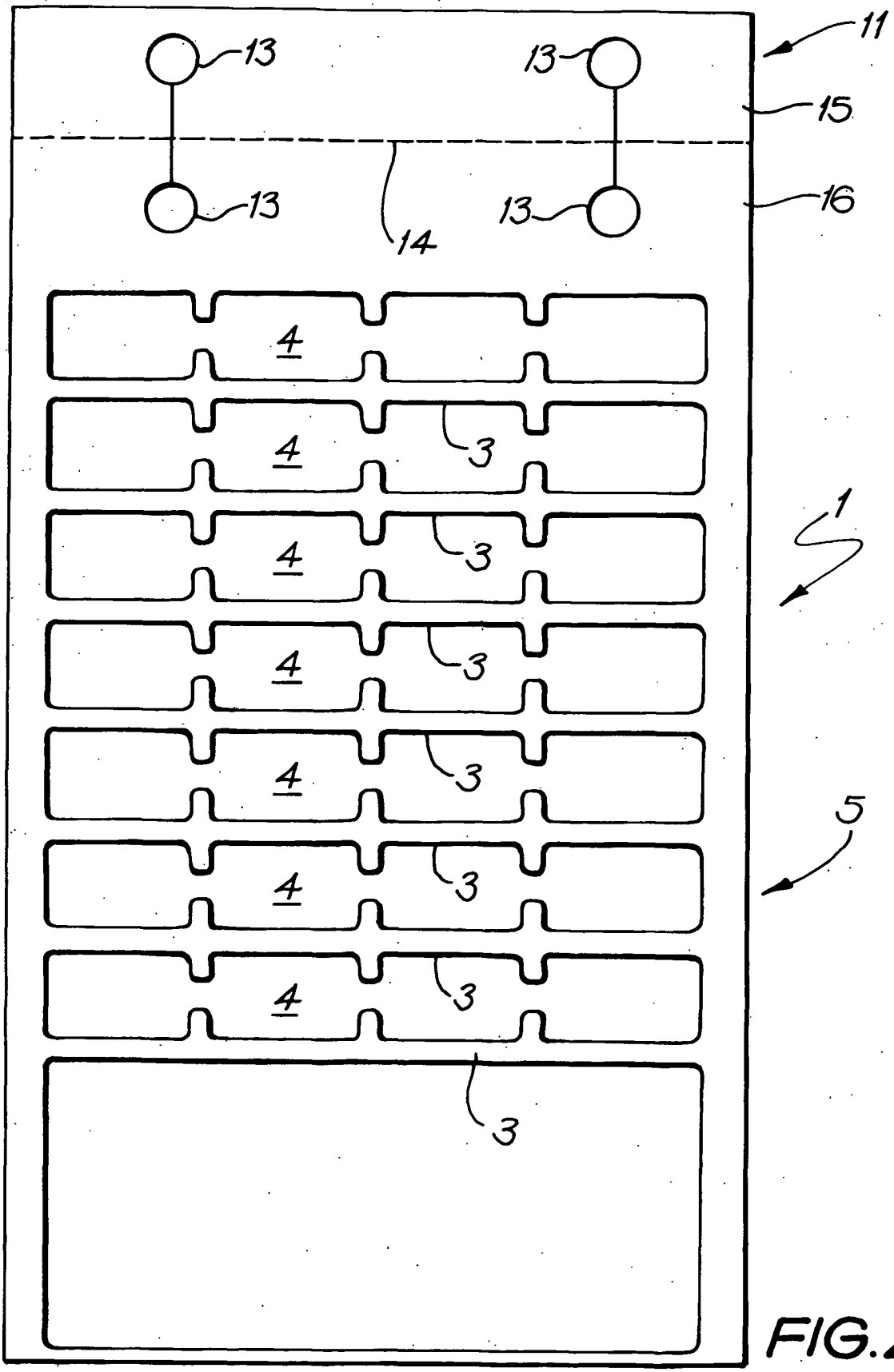


FIG.2

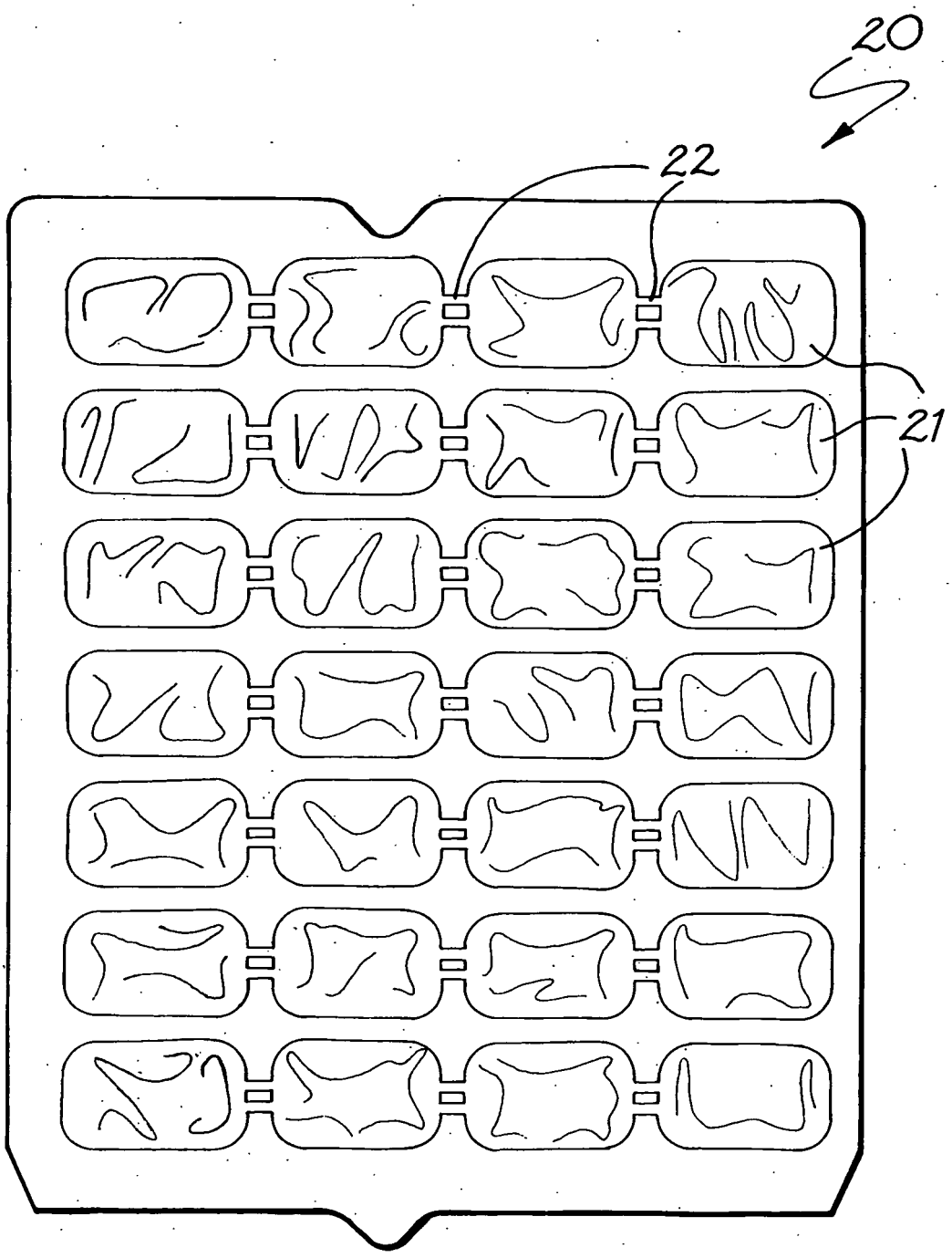


FIG. 3

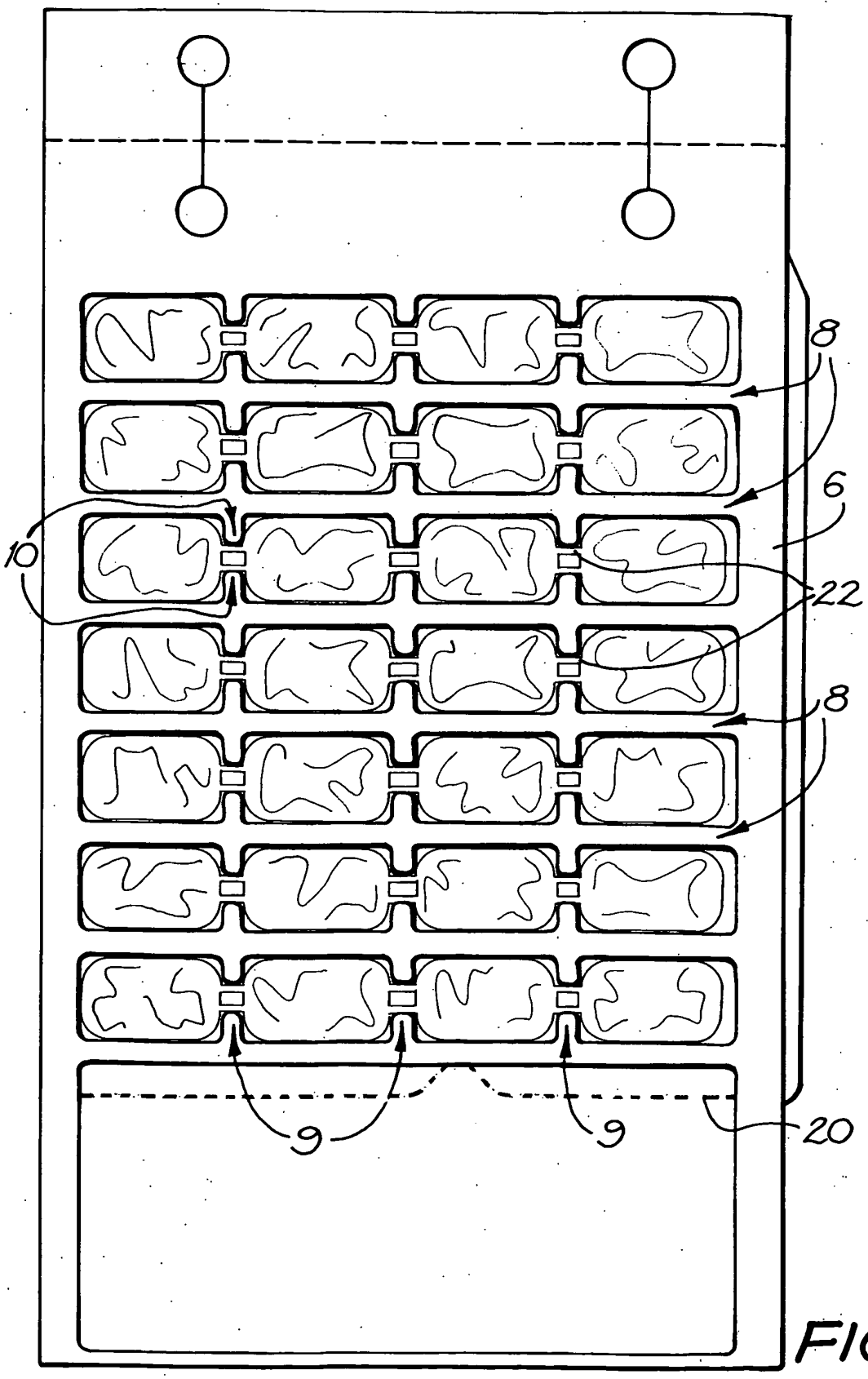


FIG.4

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- AU 2009202203 **[0003]**
- US 20040188315 A1 **[0006]**