(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 441 102 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **90830092.4**

(51) Int. Cl.5: **B65D 85/60**, B65D 5/50

(22) Date of filing: **13.03.90**

(30) Priority: **10.01.90 IT 6701290**

(43) Date of publication of application:
14.08.91 Bulletin 91/33

(84) Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

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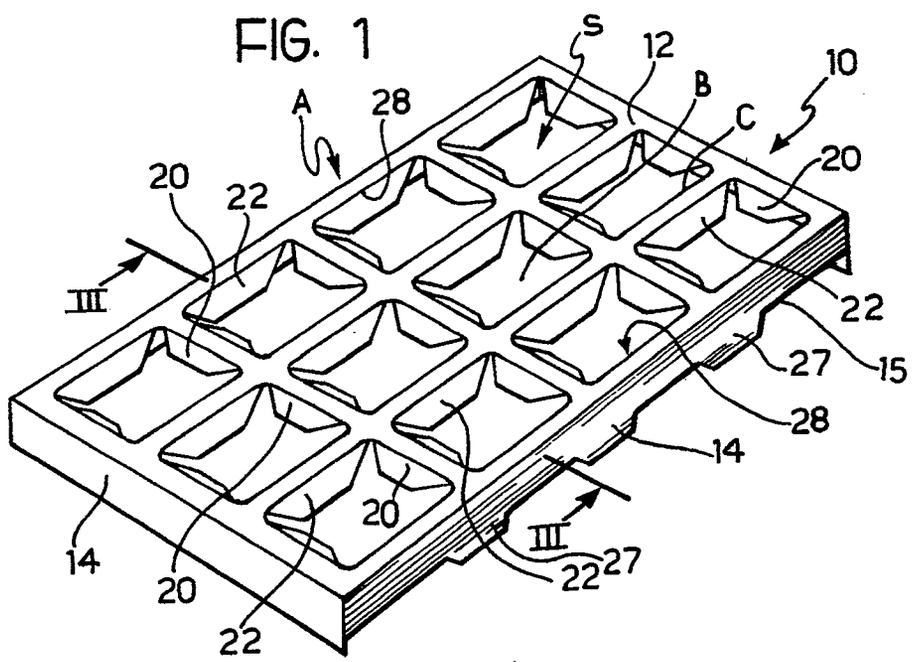
(54) Punched cardboard element for keeping and showing sweets and the like.

(57) An element (10) for holding and presenting confectionery products and the like, for insertion in the bottom of a box, is constituted by a sheet of card (12) defining a plurality of annular punched lines. Within each punched line, there are slits defining flaps (20, 22) which can be bent to hold the products.

FIG. 1



EP 0 441 102 A1

ELEMENTS OF PUNCHED CARD FOR HOLDING AND PRESENTING CONFECTIONERY PRODUCTS AND THE LIKE

The present invention relates to an element for holding and presenting confectionery products, particularly chocolates and the like, which is adapted to define a plurality of seats for the products.

Currently, such elements are made by the thermoforming of sheets of plastics material for insertion in boxes of punched card. A plurality of cells arranged in an ordered array are therefore thermoformed in the sheets, and serve both to keep the products in position and to prevent direct contact between the products and the bottom of the box which, as a result of any pressures or knocks, could damage the products contained.

As well as requiring special equipment which is somewhat different from that normally used in the paper and cardboard sector, the production of these thermoformed plastics elements considerably increases the environmental impact of the box as regards solid waste. In fact, the thermoformed sheet is not biodegradable and may produce noxious gases if it is burnt.

The object of the present invention is to provide an element of the type specified at the beginning of the description which does not have the aforesaid disadvantages and which is also completely biodegradable.

According to the invention, this object is achieved by virtue of the fact that the element comprises a flat sheet of card or similar material having a plurality of annular punched lines and, within the punched lines, slits which define a plurality of holes in the sheet when the flaps defined between the slits and the punched lines are bent, the holes having at least two opposite side walls for retaining the products.

By virtue of these characteristics, the card element can fulfil the same function as a thermoformed cellular element of known type, providing considerable advantages in terms of cost and environmental impact.

Further advantages and characteristics of the holding and presentation element according to the invention will become clear from the detailed description which follows, given purely by way of non-limiting example, with reference to the appended drawings, in which:

Figure 1 is a perspective view of a holding and presentation element according to the invention,

Figure 2 is a perspective view of the element of Figure 1 from below,

Figure 3 is a section taken on the line III-III of Figure 1,

Figure 4 is a view of a flat punched element from which the element of Figure 1 is made,

Figure 5 is a perspective view of a first embodiment of the element of Figure 1,

Figure 6 is a section taken on the line VI-VI of Figure 5,

Figure 7 is a plan view of the punched sheet from which the element of Figure 5 is made,

Figure 8 is a perspective view of a variant of the embodiment of Figure 5,

Figure 9 is a cross-section of the element of Figure 8 in a closed configuration,

Figure 10 is a perspective view of a third embodiment of the element according to the invention,

Figure 11 is a perspective view of an element of Figure 8 from below,

Figure 12 is a section taken on the line XII-XII of Figure 10,

Figure 13 is a plan view of the punched sheet from which the element of Figure 10 is made,

Figure 14 is a perspective view of a fourth embodiment of the element according to the invention,

Figure 15 is a perspective view of the element of Figure 14 from below,

Figure 16 is a section taken on the line XVI-XVI of Figure 14,

Figure 17 is a view of an upper, flat punched element from which the element of Figure 14 is made,

Figure 18 is a view of a lower, flat punched element from which the element of Figure 14 is made,

Figure 19 is an exploded perspective view of a fifth embodiment of the element according to the invention,

Figure 20 is a section taken on the line XX-XX of Figure 19,

Figure 21 is a perspective view of a sixth embodiment of an element according to the invention,

Figure 22 is a perspective view of the element of Figure 21 from below, and

Figure 23 is a section taken on the line XXIII-XXIII of Figure 17.

With reference to the drawings, an element for holding and presenting confectionery products is generally indicated 10 and comprises a flat punched sheet of card 12 with straight punched lines 12a and a plurality of annular punched lines 12b. These punched lines, which define lines of bending, are of the so-called half-cut type, that is, they are formed by cutting through half the thickness of the sheet 12.

With particular reference to the embodiment

shown in Figures 1-4, the punched sheet 12 has a first rectangular portion A bounded by the straight punched lines 12a which are adapted to define lateral gluing flaps 14, and a second portion B which is joined to the first in correspondence with a straight punched line 15 broken by substantially U-shaped slits 16. The second portion B of the punched sheet 12 also has straight punched lines 12a adapted to define lateral gluing flaps 17 for cooperating with the lateral flaps 14 in known manner.

The annular punched lines 12b are substantially rectangular with rounded corners and are arranged in an ordered array in the first portion A of the punched sheet 12. Slits 18 are provided within each annular punched line 12b and comprise I-shaped central portions 18a whose stems are parallel to and equidistant from the longer sides of the respective rectangular punched lines 12b, and four connecting portions 18b between the tips of the ends of the I-shaped central portions 18a and the rounded corners V of the punched lines 12b. The slits 18 and the annular punched line 12b thus define two resilient flaps 20 of card in the form of isosceles trapezia and two support flaps 22 having portions which are also in the form of isosceles trapezia and the shorter bases of which extend to form rectangular portions, indicated 22a in the drawings.

The second portion B of the punched card sheet 12 has a plurality of rectangular holes 24 arranged in positions such that, when the element 10 is assembled, they correspond to the longer sides of the rectangular punched lines 12b to which the support flaps 22 are articulated. Adjacent rectangular holes 24 are joined by shorter central portions so are generally to define substantially double-T-shaped holes 25.

When the element 10 is assembled, the second portion B of the punched sheet 12 is bent underneath the first portion A along the straight punched line 12a joining the first and second portions and along the punched line 15. During this bending, the slits 16 define support portions 27 which project downwardly so as to keep the first portion A of the sheet 12 at a constant distance from a support plane, for example, the bottom of a box. After the second portion B has been bent relative to the first portion A and the lateral flaps 14 and 17 have been glued together, the support flaps 22 and the resilient flaps 20 are bent so as to form a plurality of holes 28 in the first portion A of the punched sheet 12 defining, with the bent flaps 20 and 22, a plurality of seats S for substantially parallelepipedal products. When the support flaps 22 are bent, their rectangular ends 22a are fitted into respective retangular holes 24 so as to project below the plane of the second portion B of the punched sheet 12 (Figures 2 and 3) and have the function of forming a support on the bottom of the box. The rectangular end portions 22a of the support flaps 22 are therefore situated in the plane defined by the bent and glued flaps 14 and the support portions 27 so as to keep the frames C defined by the holes 28 in the punched sheet 12 at a predetermined distance from the lower support plane constituted, for example, by the bottom of a box.

The resilient flaps 20 "float" and, by virtue of the resilient force biassing them towards a configuration in which they are coplanar with the frames C, help to keep the products in position by eliminating the clearance between the products and the seats S. The support flaps 22, on the other hand, are kept apart by virtue of their engagement in the holes 24 in the punched sheet 12.

The embodiment shown in Figures 5-7, in which the same reference numerals are retained for similar elements, includes a third portion D of the punched sheet 12 which, in the assembled configuration, is adapted to constitute the bottom of the box. In this embodiment, therefore, the element 10 for holding and presenting the products can be used as the base of a box which can be completed by a suitable lid E, shown in broken outline in Figure 6.

Alternatively, a finished box can be produced by the superposition of two elements 10, in which one glued lateral flap 21 can be used as a hinge. In this variant, shown in Figures 8 and 9, both the base and the lid of the box have cells for the improved restraint and protection of the products.

For confectionery products of rounded shape, the variant shown in Figures 10-13 may be used to advantage. In this variant, the first portion A of the punched sheet 12 has annular punched lines 30 which are substantially square with curved sides 30a connected by rounded corners 30b. Within each punched line 30, two slits 32 arranged along the diagonals of the punched outline and a central square hole 33 define four, substantially-triangular support flaps 34 which, when the element 10 is assembled, are adapted to be inserted in corresponding holes 35 provided in the second portion B below the first portion A of the punched element 12 and arranged in correspondence with the curved sides 30a of the punched line 30. The curved lines of bending in correspondence with the punched sides 30a give the upper frame wall C of the element 10 a wavy appearance, as shown in Figure 10. Moreover, in their opened-out configuration, the flaps 34 form curved vertical walls which are adapted to fit the rounded products perfectly. The free appendages of the flaps 34 below the portion B of the punched sheet 12 act as feet and as supports for the upper frame wall C. To advantage, the

element 10 of the variant of Figures 10-13 can be inserted in the bottom of a box or can be used as the base of a box if a third portion of the punched sheet is included, as described in connection with the variants shown in Figures 5-7 or 8-9.

The variant shown in Figures 14-18, although substantially similar to the solution shown in Figures 1-3, differs therefrom in that the punched element 12 does not have a second portion which can be bent but is assembled with an auxiliary sheet 40 which is glued or heat-sealed in correspondence with bent edges 42 and in correspondence with bent lateral flaps 43 of the punched sheet 12. The auxiliary sheet 40 also has a plurality of rectangular holes 44 for cooperating with support flaps 22 defined by the annular punched lines 12b and by the shaped slits 18.

The variant shown in Figures 19 and 20 has a punched sheet 12 substantially corresponding to that shown in Figure 17. A flat corrugated pad M of the type used, for example, as a resilient element between the products and the lid of a box is interposed between the sheet and the bottom of the box F, shown in broken outline in Figure 16.

The holding and presentation element shown in Figures 21-23 is substantially similar to that shown in Figures 1-4 but differs therefrom in the different shapes of the slits 18 which define tongues 50 bent relative to the flaps 20 and 22 and heat-sealed to the lower portion B of the punched element 12. The holes in the flat portion, in to which the support flaps fit, are therefore no longer necessary and only aligned central holes 53 are provided for enabling the insertion of suitable locating devices for keeping the upper frame wall C of the punched sheet 12 in position during the heat-sealing.

Naturally, it is possible to heat-seal only two opposite flaps to the portion B whilst the other two flaps can be left free or, according to a further variant, can be fitted into holes in the portion B in exactly the same way as that shown in Figures 2 and 3. A firmer element is thus produced since the heat-sealed flaps keep the upper frame wall C of the element 10 joined to the lower base wall B for the products whilst the flaps fitted into the corresponding holes act as lower supports on the bottom of the box.

The above description shows clearly the advantages of the holding and presentation element according to the invention which, by virtue of its particular characteristics, can be used not only as an accessory for a box but as an integral and structural part of the box itself.

Claims

1. An element for holding and presenting confectionery products, particularly chocolates and the like, which is adapted to define a plurality of seats for the products, characterised in that it comprises a flat sheet (12) of card or similar material having a plurality of annular punched lines (12b, 30) and, within the punches lines (12b, 30), slits (18, 32) which define a plurality of holes (28) in the sheet (12) when the flaps (20, 22, 34) defined between the slits (18, 32) and the punched lines (12b, 30) are bent, the holes having at least two opposite side walls (20, 22, 34) for retaining the products.

2. An element according to Claim 1, characterised in that each annular punched line (112b) is substantially rectangular and in that the slits (18) within each annular punched line (12b) have an I-shaped central portion (18a) arranged with its stem equidistant from and parallel to the longer sides of the punched line (12b) and four connecting portions (18b) between the tips of the ends of the I-shaped central portion (18a) and the corners (V) of the punched line (12b), whereby there are defined two resilient trapezoidal flaps (20) in correspondence with the shorter sides of the punched line (12b) and two support flaps (22) each having a trapezoidal portion adjacent the punched line (12b) and a rectangular portion (22a) connected to the trapezoidal portion.

3. An element according to Claim 1 or Claim 2, characterised in that the flat sheet (12) is associated with the bottom of a box (F) with the interposition of a sheet (M) of shock-absorbing material 4.

4. An element according to Claim 2, characterised in that an auxiliary sheet (12, B) is arranged beneath the sheet (12,A) and has a plurality of holes (24) with dimensions substantially corresponding to the lengths of the rectangular portions (22a) of the support flaps (22) and in which these portions are inserted in order to keep the support flaps (22) in an opened-out position.

5. An element according to Claim 4, characterised in that the auxiliary sheet (12, B) is glued or heat-sealed to bent side flaps (43) of the flat sheet (12, A) at a predetermined distance therefrom.

6. An element according to Claim 4, characterised in that the auxiliary sheet (12, B) is integral with the flat sheet (12, A) and is articulated thereto in correspondence with two substantially straight, parallel punched lines (12a, 15) for enabling the auxiliary sheet (12, B) to be bent beneath the main sheet (12, A) to insert the support flaps (22) in the holes (24) of the auxiliary sheet (12, B).

7. An element according to Claim 6, characterised in that the flat sheet (12, A) has an integral base sheet (12, D) which is adapted to be bent beneath the auxiliary sheet (12, B) and against which the support flaps (22) bear in the assembled condition of the element (10).

8. An element according to Claim 7, characterised

in that it has a lateral flap (21) glued or heat-sealed to a similar element (10) so as to define a hinge between a base and a lid, both provided with seats for products.

9. An element according to Claim 1, characterised in that each annular punched line (30) is substantially square with curved sides (30a) connected by rounded corners (30b), and in that the slits (32) within each punched line (30) are arranged diagonally so as to define substantially triangular flaps (34).

10. An element according to Claim 9, characterised in that an auxiliary sheet (12, B) is arranged beneath the flat sheet (12, A) and has a plurality of holes (35) which are arranged substantially in correspondence with the sides (30a) of the annular punched lines (30) and in which the free corners of the flaps (34) are intended to be inserted to keep them in the opened-out position.

11. An element according to Claim 1, characterised in that, for each annular punched line (12b), at least two opposite flaps (20, 22) are glued to an auxiliary sheet (12, B) beneath the flat sheet (12, A).

FIG. 1

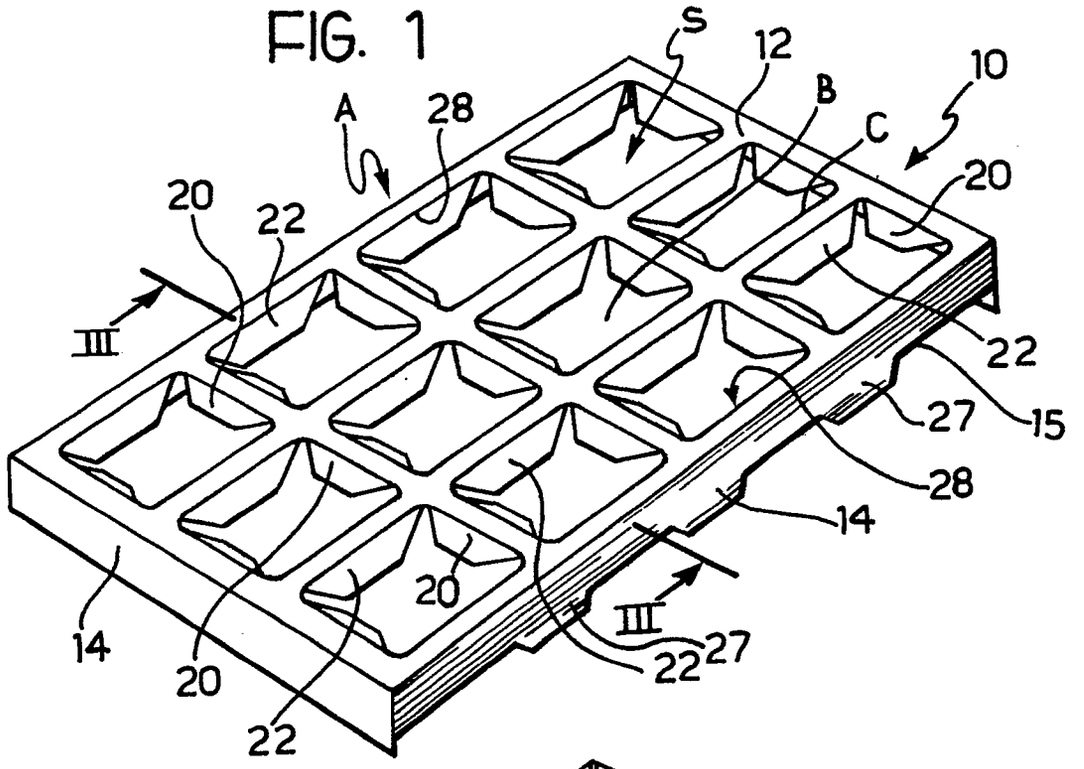


FIG. 2

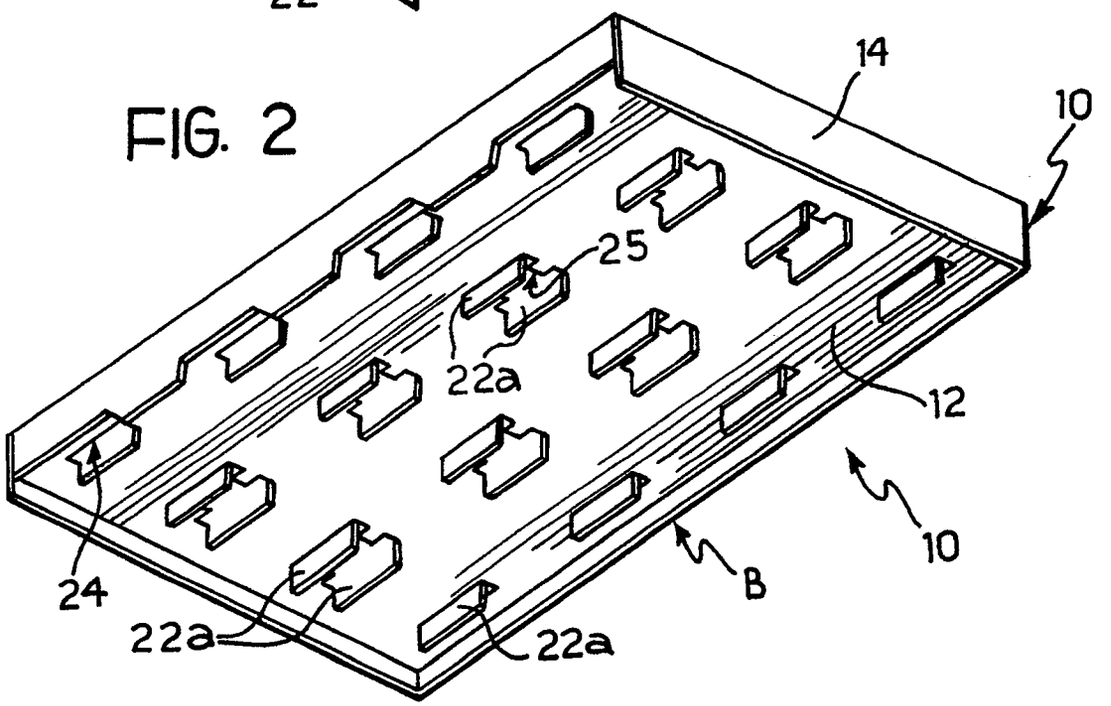


FIG. 3

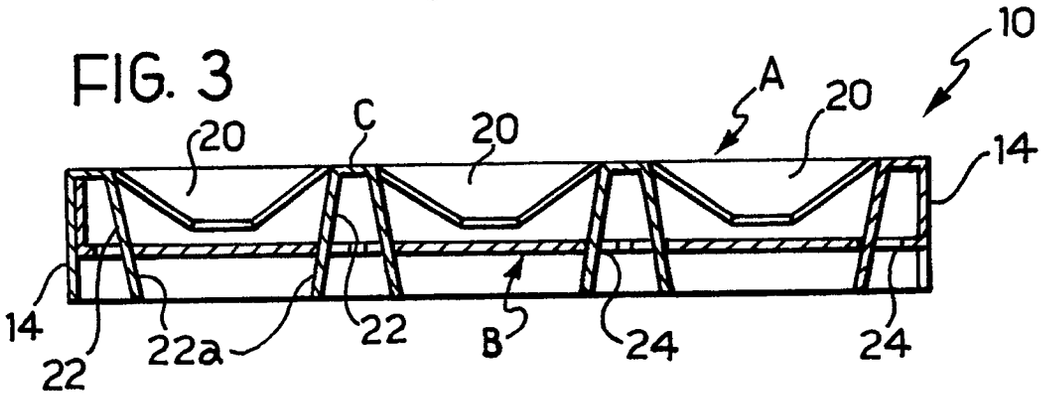
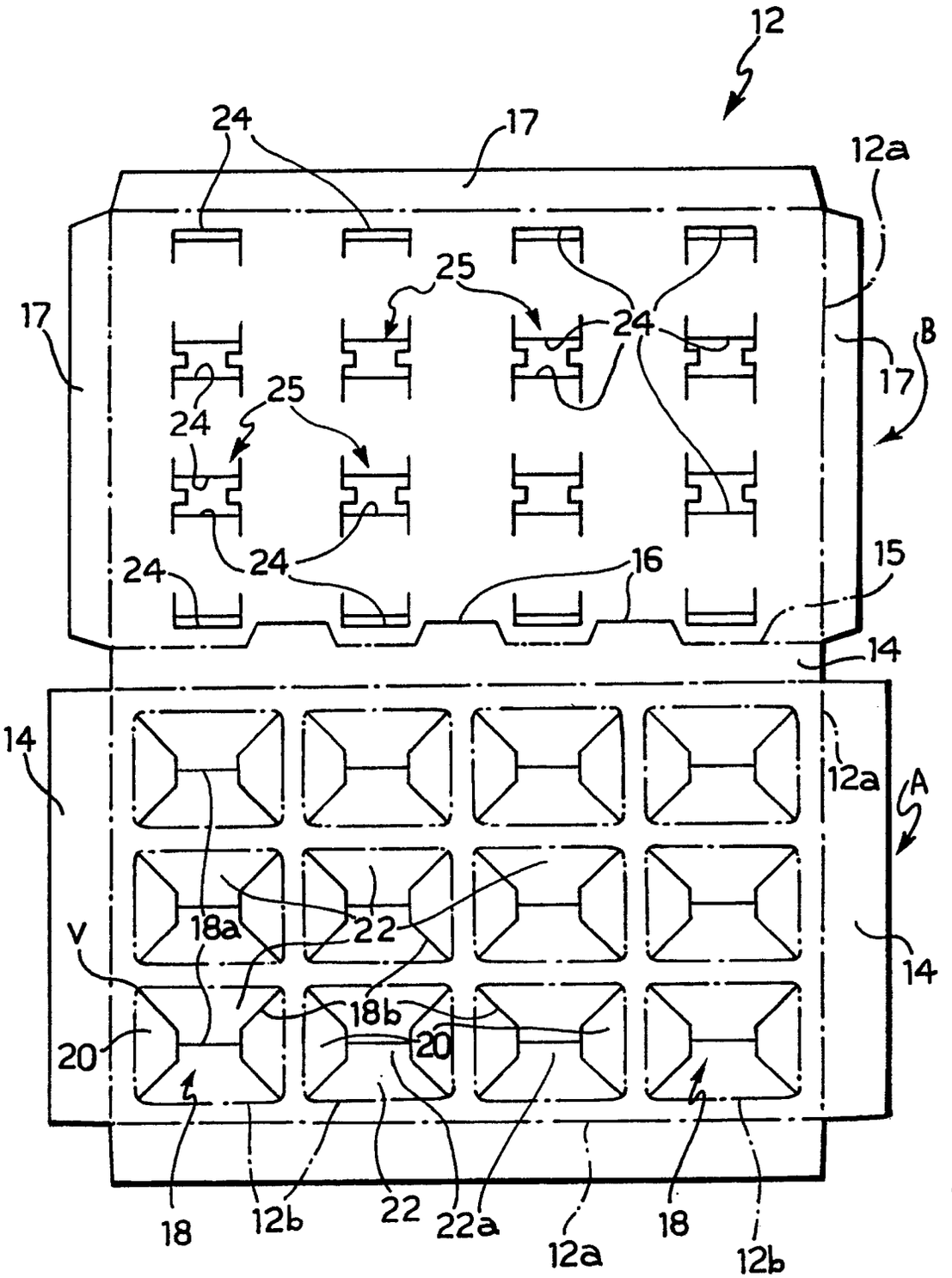


FIG. 4


12
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17
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12a
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V
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18b
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14
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12b
22
22a
12a
18
12b

FIG. 5

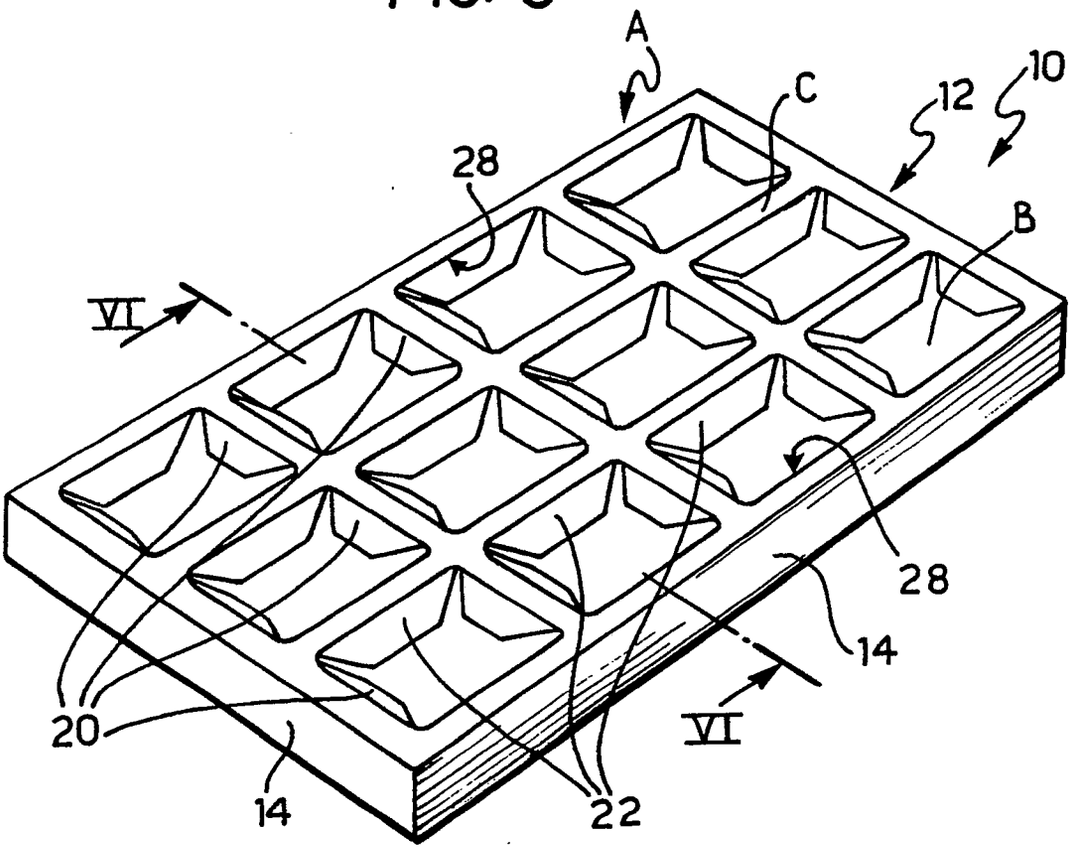


FIG. 6

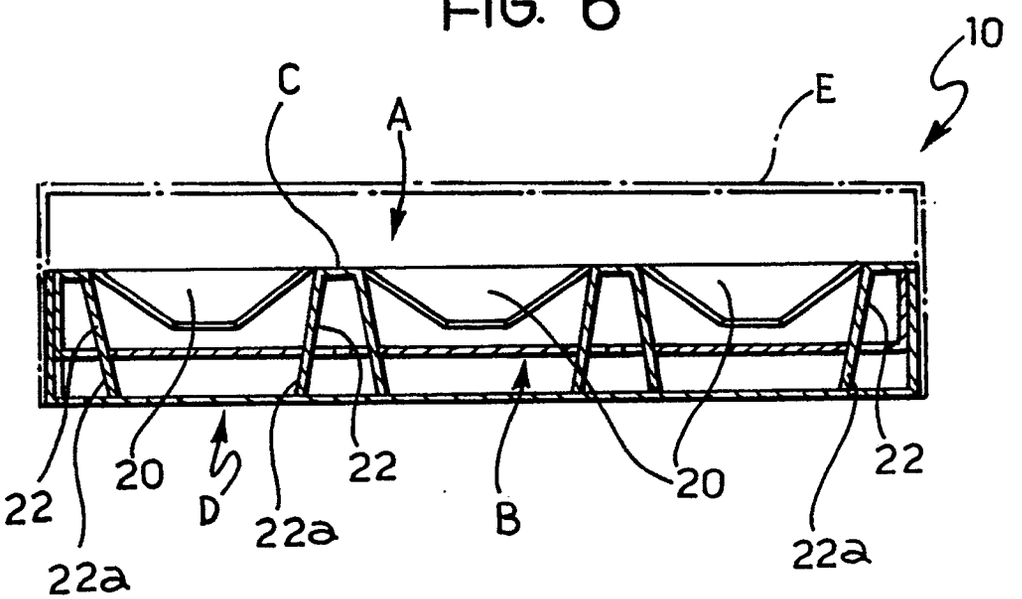


FIG. 7

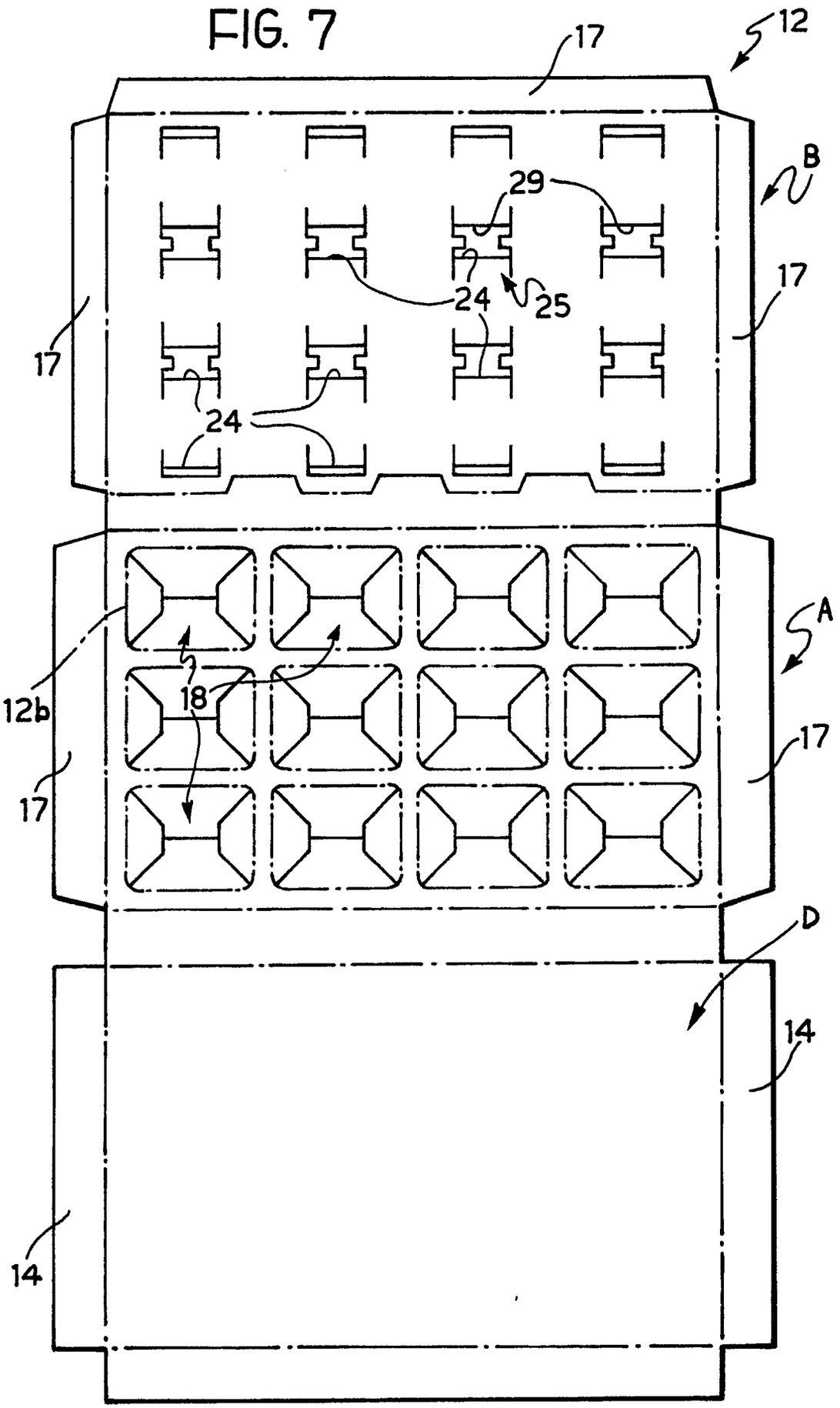
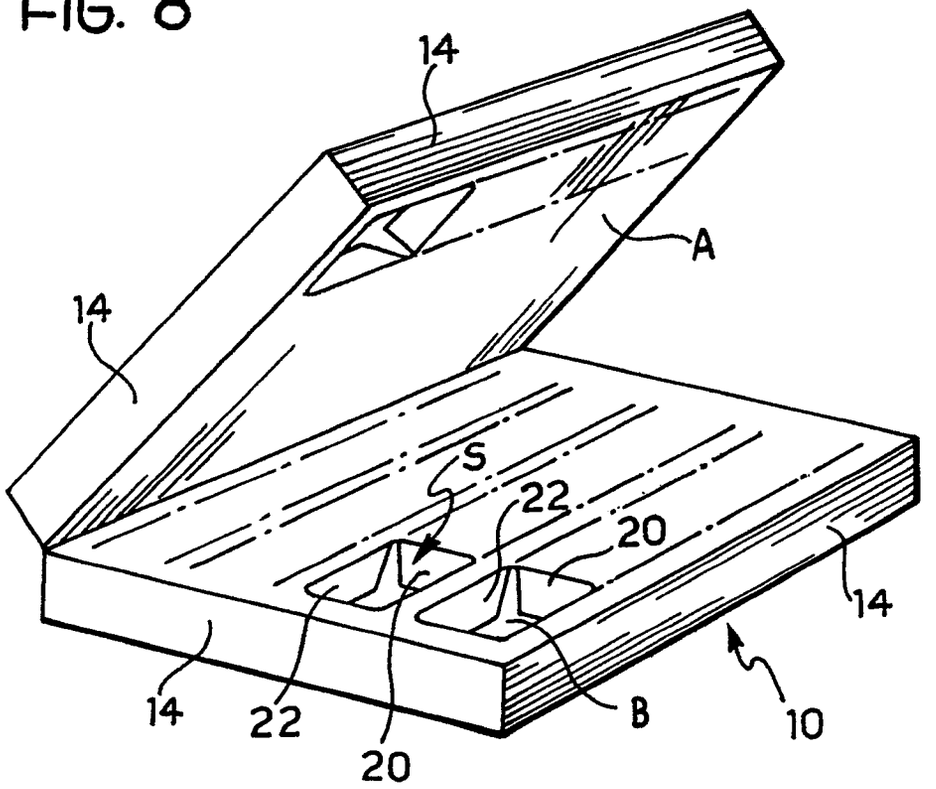


FIG. 8


14
A
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S
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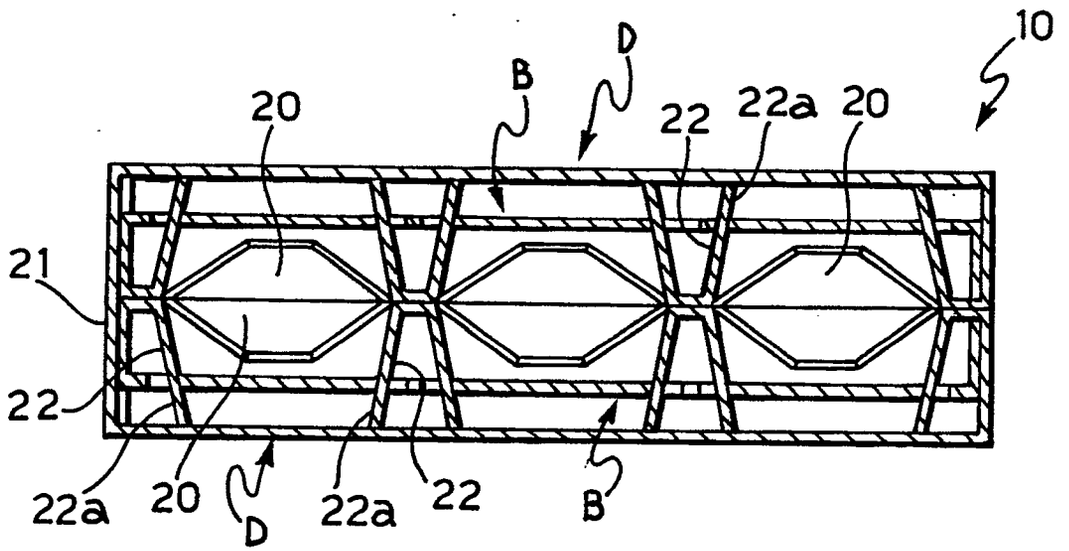
B
10

FIG. 9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D
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20
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22a
20
21
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22a
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D
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22
B

FIG. 10

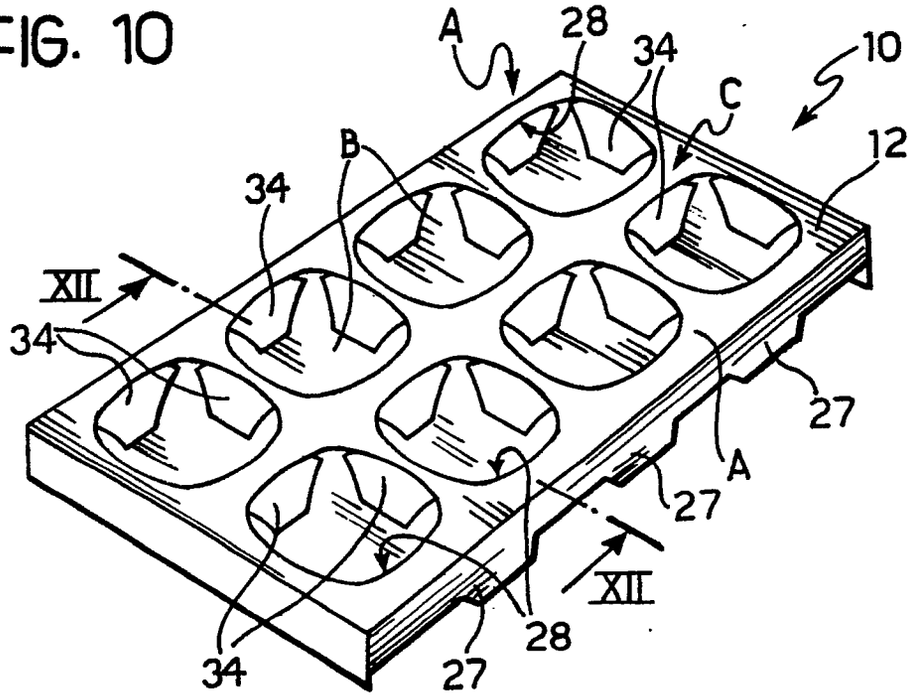


FIG. 11

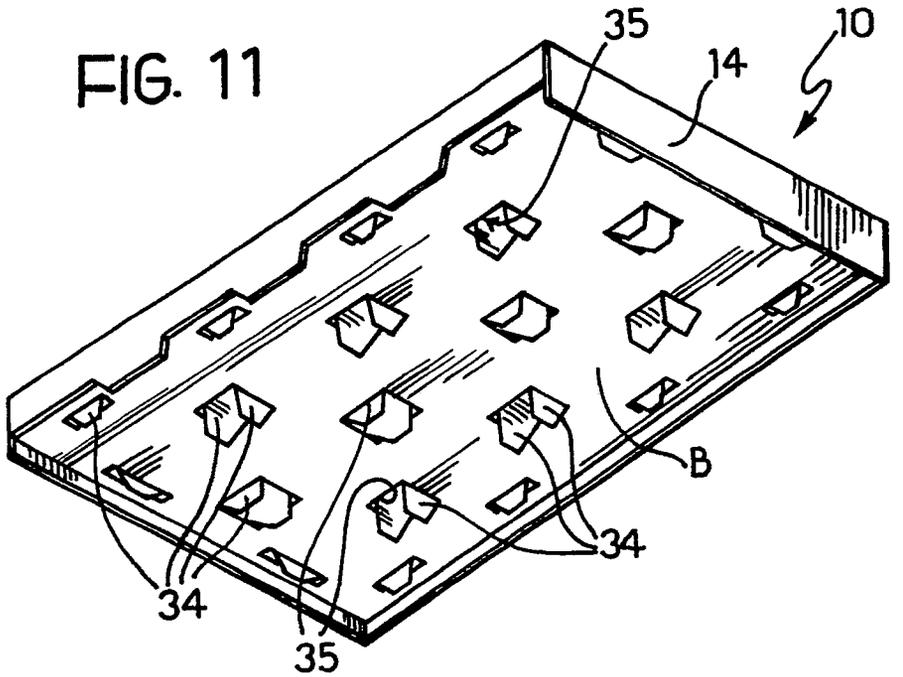
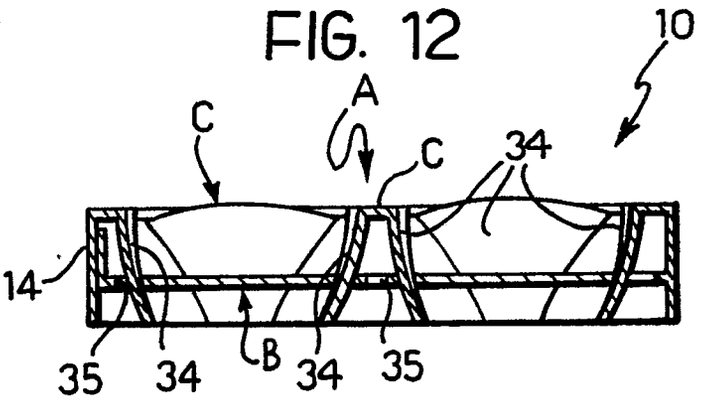


FIG. 12



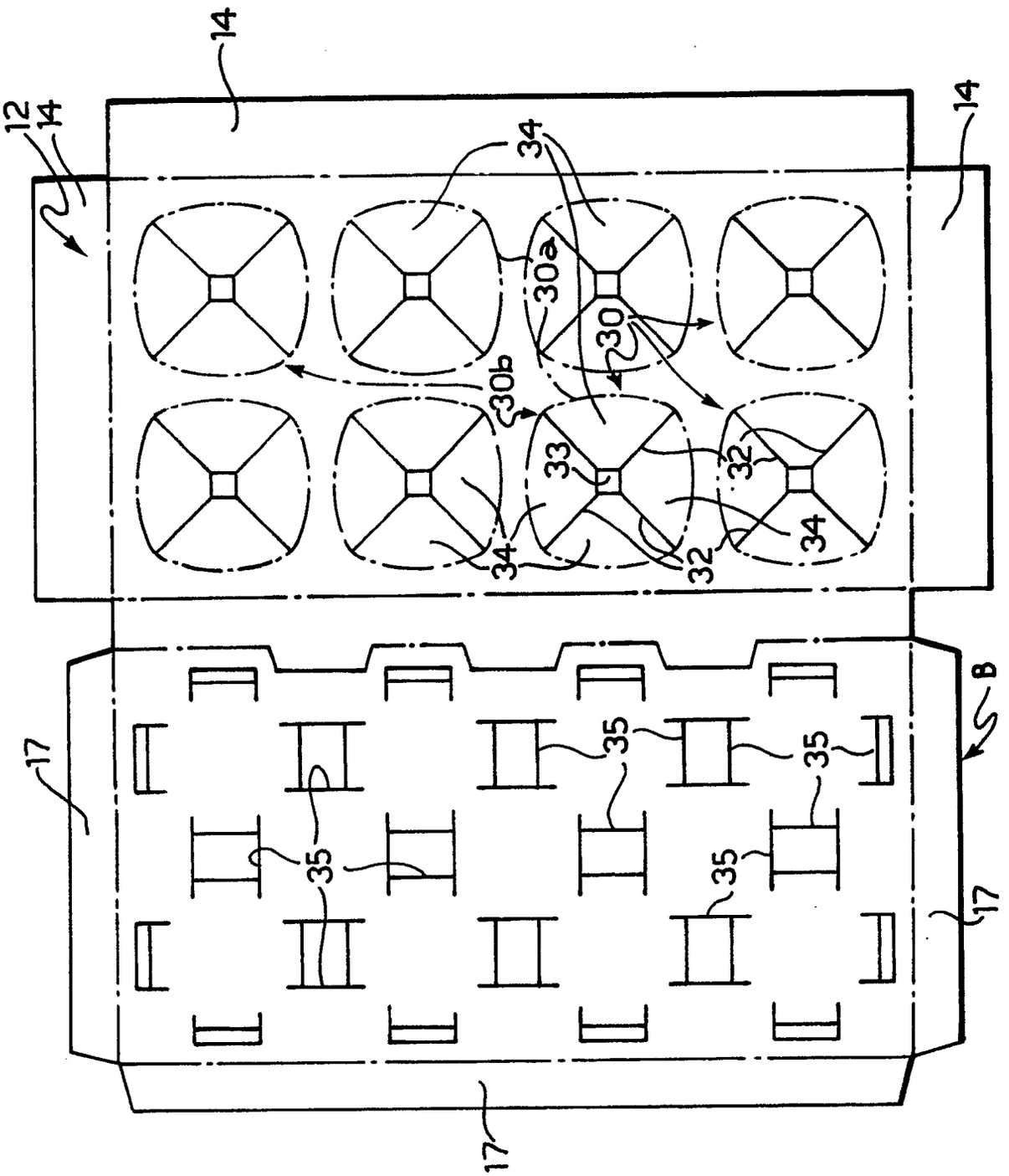


FIG. 13

FIG. 14

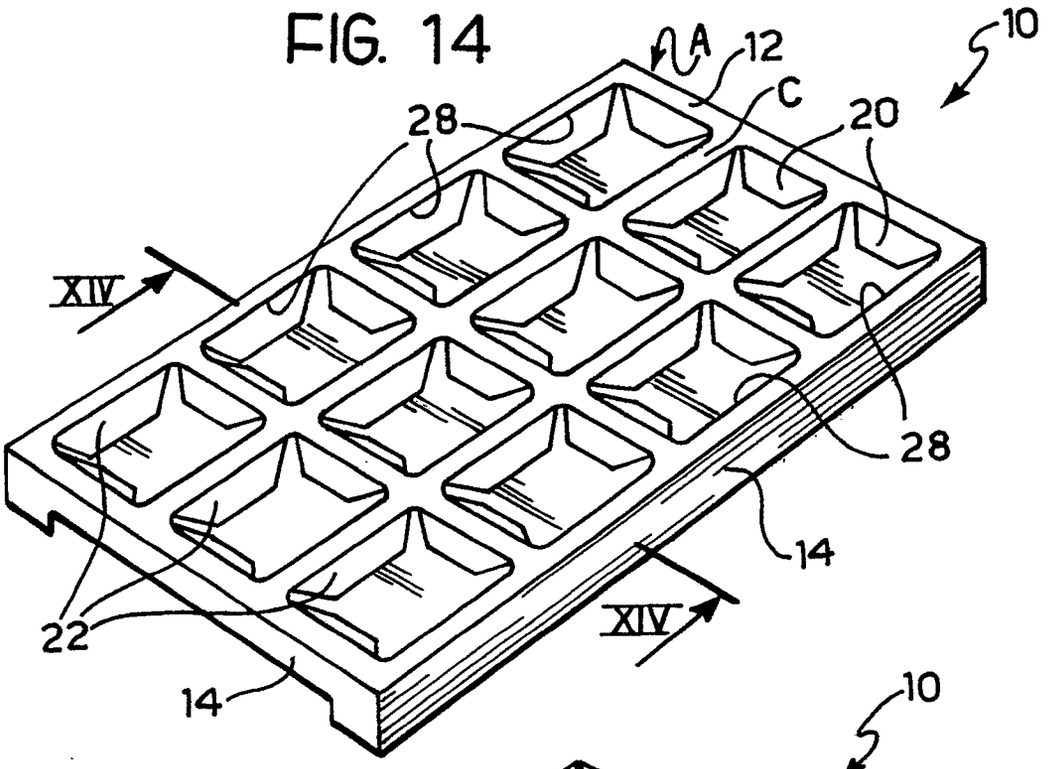


FIG. 15

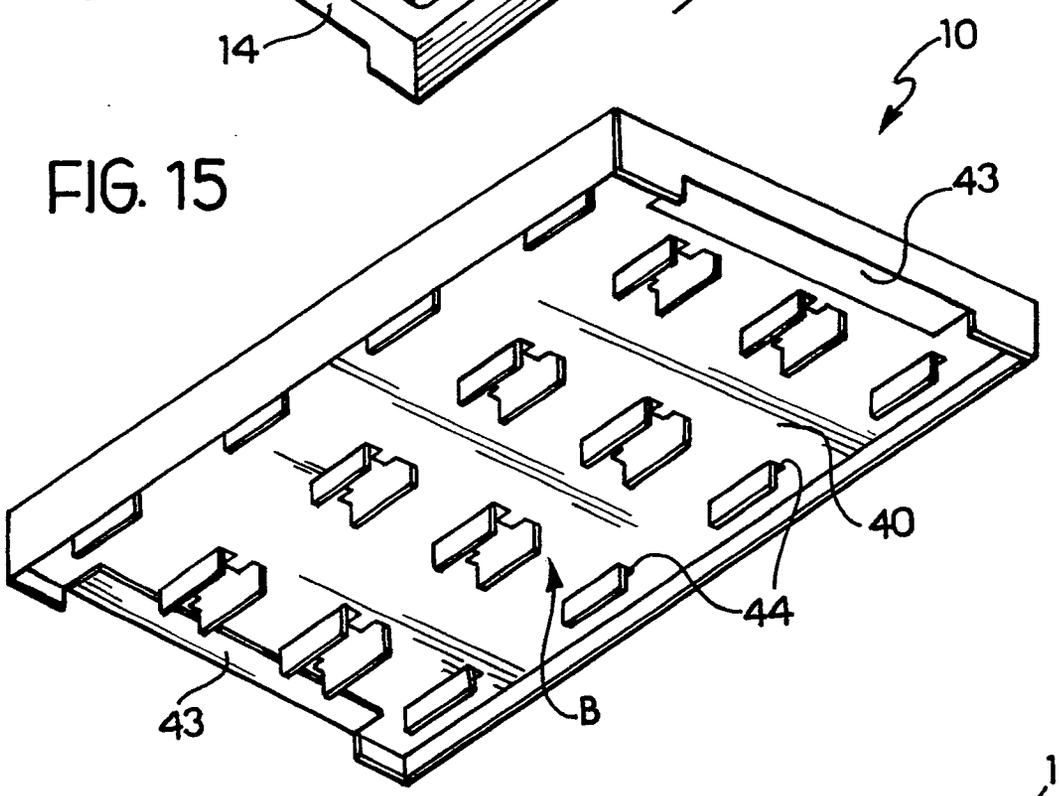


FIG. 16

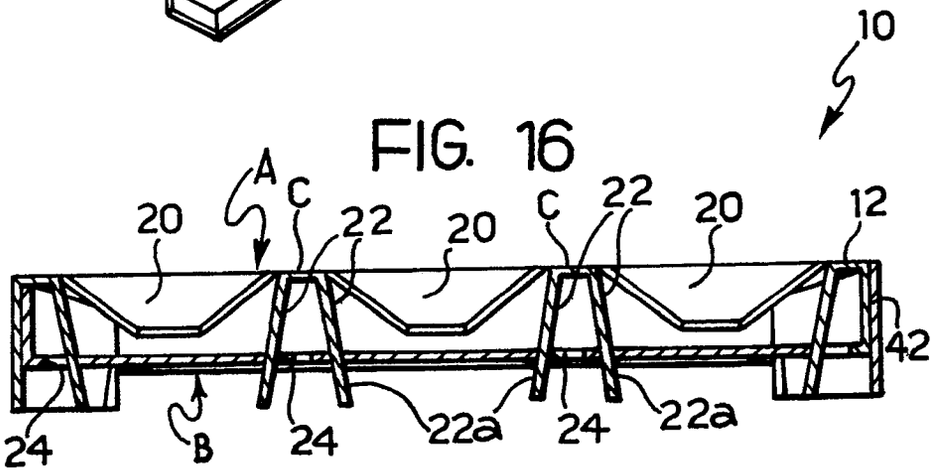
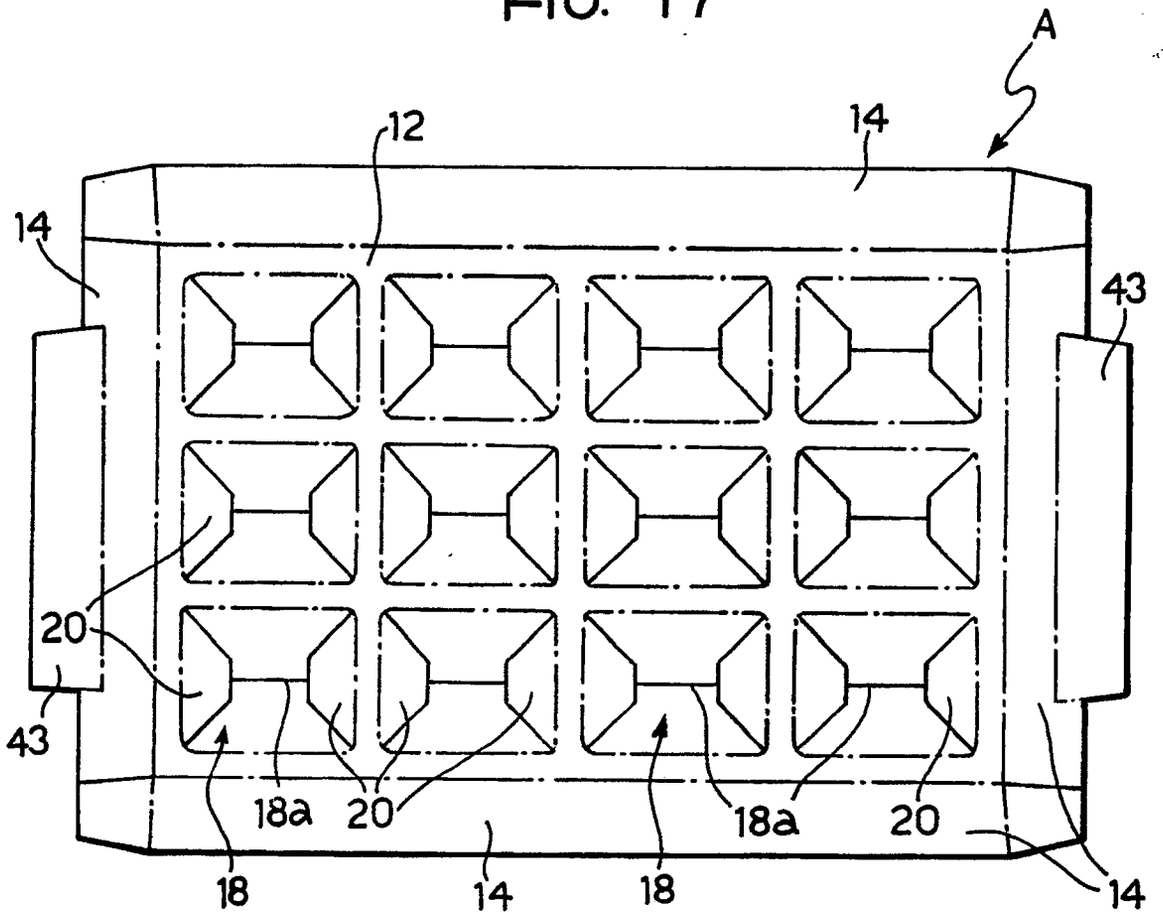


FIG. 17


A
12
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14
43
43
20
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18a
18a
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14
14
14

FIG. 18

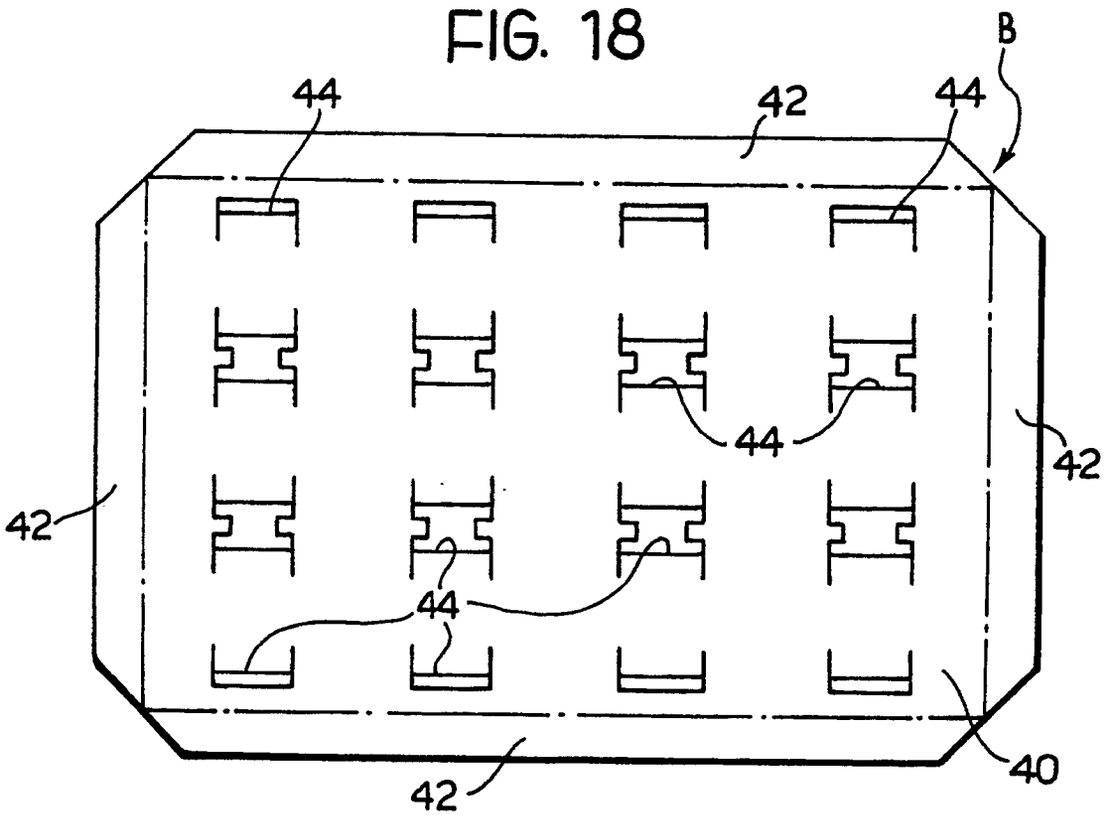
B
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FIG. 19

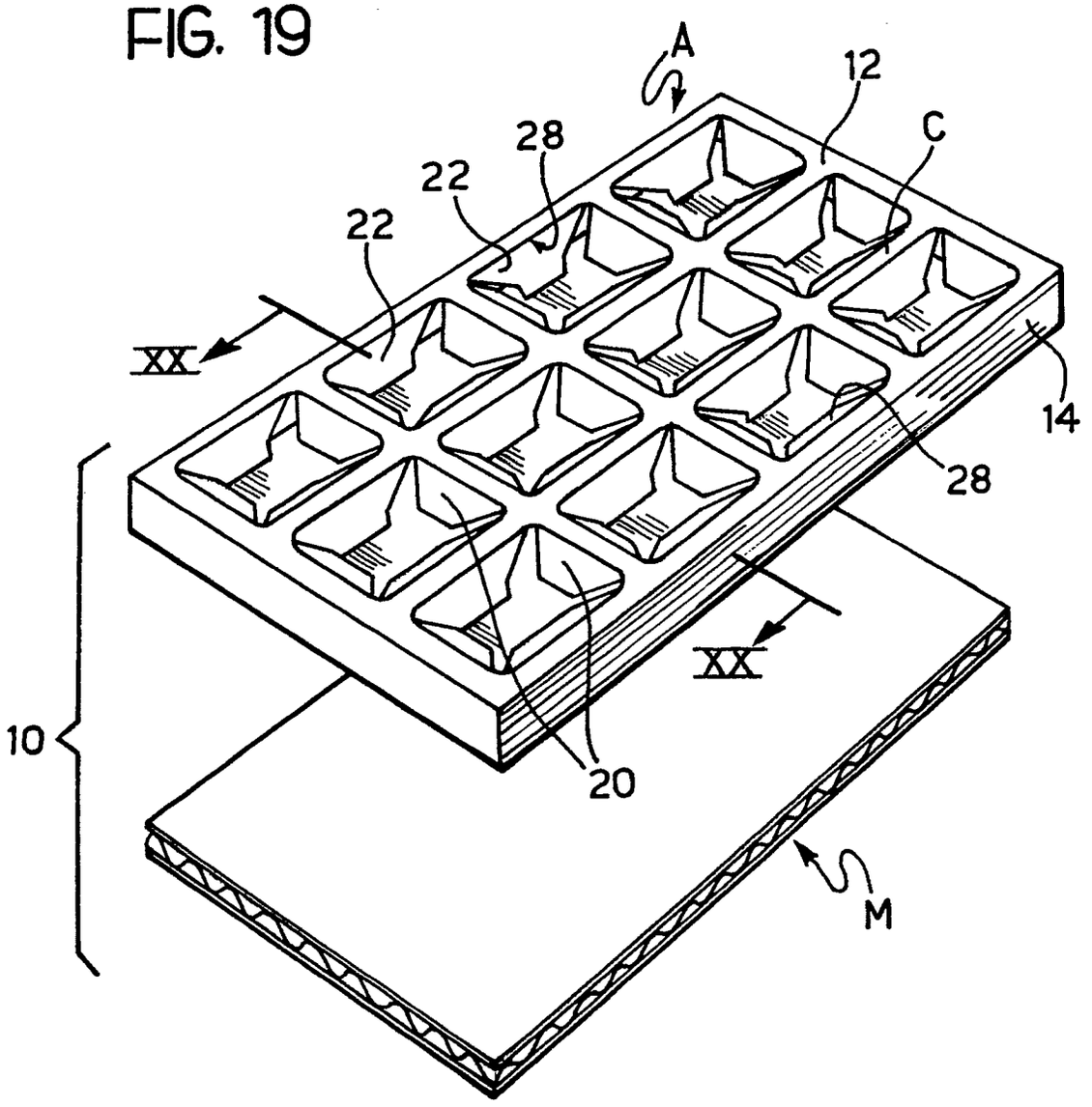


FIG. 20

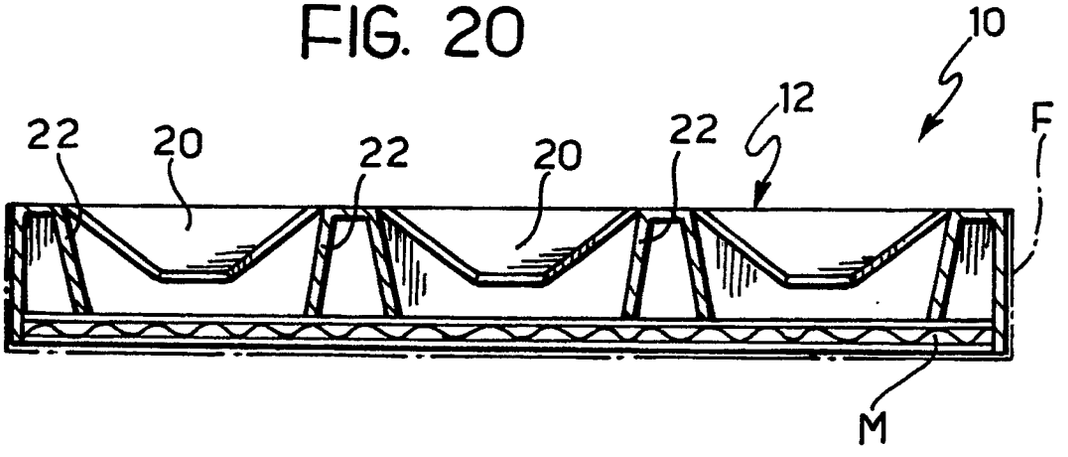


FIG. 21

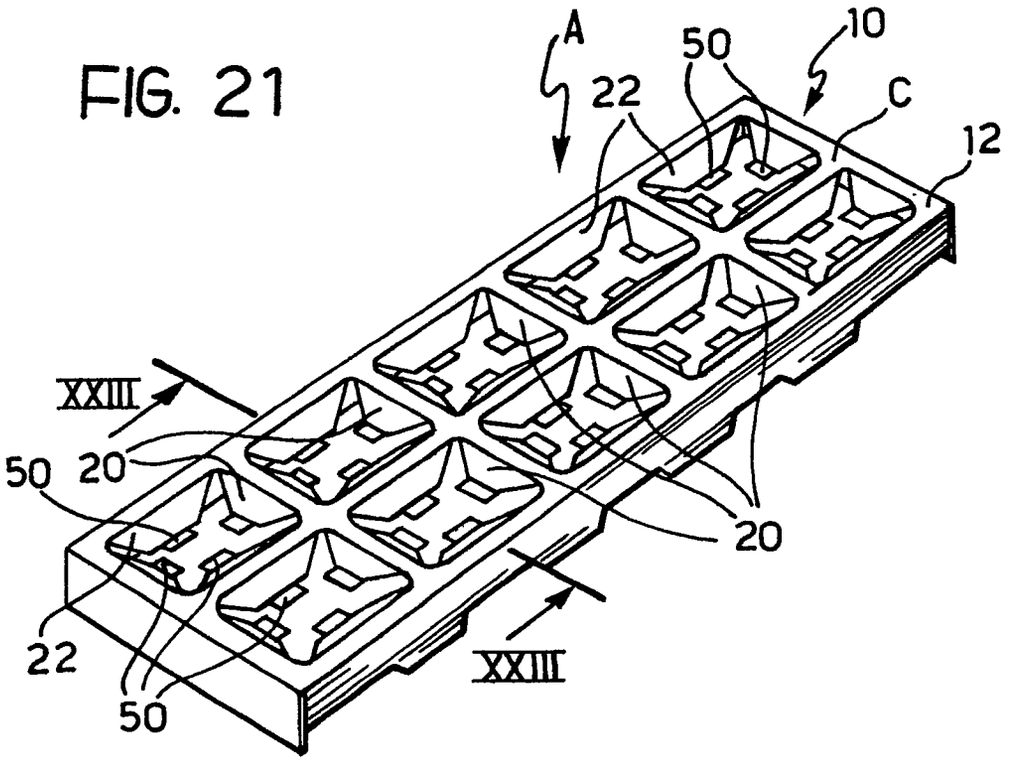


FIG. 22

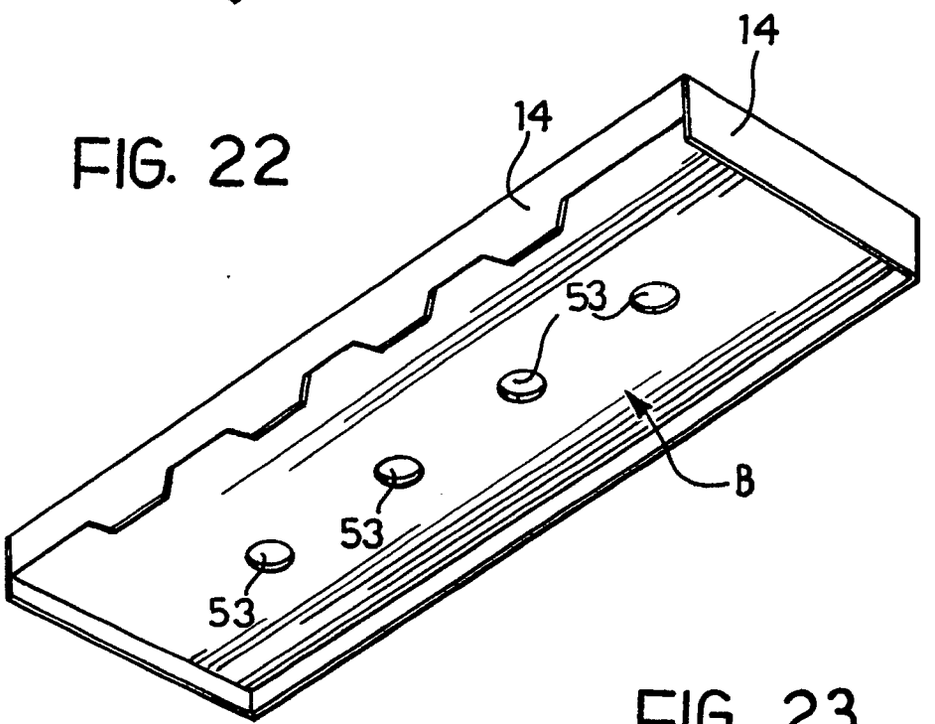
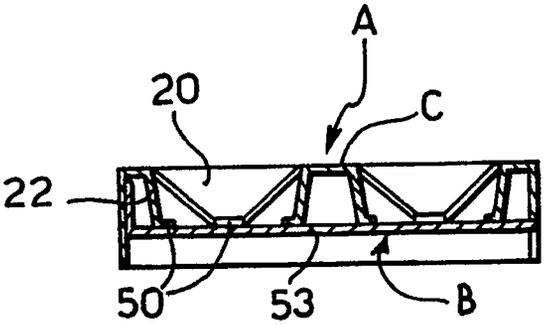


FIG. 23



European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 83 0092

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X	DE-U-8 907 594 (OFFSETDRUCKEREI CAESAR) * Page 1, lines 10-13,29-33; page 3, line 33 - page 6, line 3; figures *	1	B 65 D 85/60 B 65 D 5/50
Y		2	
A		4,6,7	
Y	GB-A-1 264 412 (GARROD) * Whole document *	2	
A	DE-U-8 907 593 (OFFSETDRUCKEREI CAESAR) * Whole document *	1,9	
A	FR-A-1 016 194 (LEDUC)		
A	DE-C- 738 917 (HILBRICH)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)
B 65 D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	22-04-1991	MARTENS L.G.R.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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D : document cited in the application
L : document cited for other reasons

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