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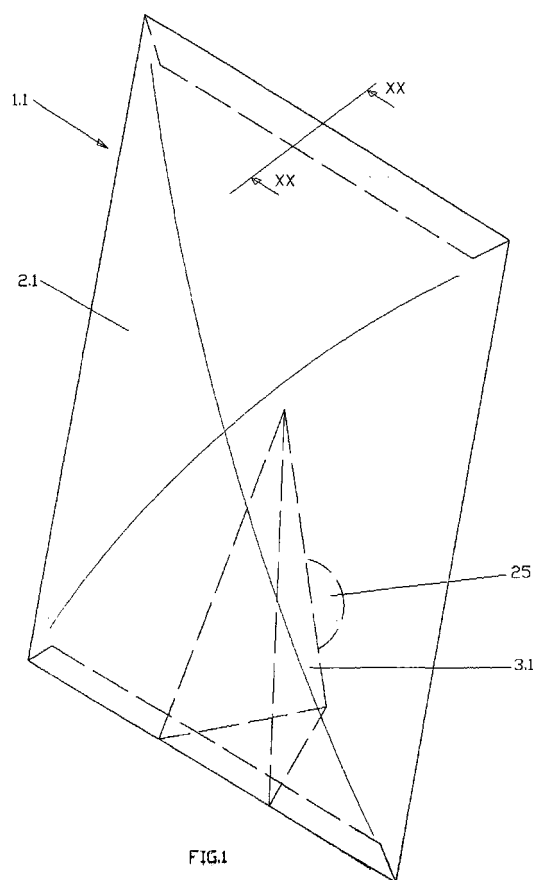
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(54) **Display provided with a convex mirror**

(57) The invention regards a display provided with a convex mirror, made of flexible cardboard or of any other material suitable for the purpose, of the type made up of a plane (2) arranged in a substantially vertical manner, kept in position by a support foot (3) positioned at the back. Such display is characterised in that it is made by means of a single element of flexible material.



Description

[0001] The object of the present finding is a display of the so-called "convex mirror" type, made of flexible cardboard or any other material suitable for the purpose, according to the general part of claim 1.

[0002] As it is well known, displays made of a plane arranged in a substantially vertical manner, kept in position by a support foot positioned at the back, are normally used in business activities.

[0003] In order to provide the said plane or "mirror" with a greater aesthetic effect and thus for further intensifying the images, the writings and any other information to be communicated to the consumer, the surface requires to be slightly convex.

[0004] According to the current background art, the convex-shaping of the mirror occurs by applying from the internal part of the abovementioned plane and rigid cardboard, of the same shape and size as the profile of the mirror, which, along reinforcing the mirror, has also and above all the function of creating an air cushion between the two walls, these leading to a slight deformation of the more flexible wall, that is the outermost one, made of a thin cardboard.

[0005] Still according to the background art, mirror displays are supported vertically by means of a support foot made of a shaped element, made of shaped resistant cardboard or of any other material, which is applied at the back, through gluing, seaming or notching.

[0006] According to the information provided above, it is easily observable that a first disadvantage of the mirror displays of the known type consists in that they are made up of at least three separate elements, which thus require to be made separately and then assembled together; all this involves performing several operations, using complex machinery and skilled personnel, thus implying low productivity.

[0007] A second disadvantage consists in that the operation the user is required to perform to provide the display with the accurate shape, to bring it from the packaged state to the open state is a tedious task, in particular regarding shaping the support foot.

[0008] The objective of the present finding is to make a display of the convex mirror type, without the drawbacks observed on similar products of the known type.

[0009] Specifically, the objective of the finding is that of making a display of the convex mirror type simple to make and easy to handle for the user.

[0010] Such objectives are obtained by means of the a mirror of the convex type and provided with a support foot, which is characterised in that it is made up of a single element, which is obtained using only one sheet of flexible material, in particular thin cardboard, and which is made through only one die-cutting operation, to define its profile, the cutting lines and the folding lines.

[0011] In practice, the die-cutting operation is used to make the die-cut plate-shaped element, in which the main panel which constitutes the visible wall or the mirror

subject of the finding is made, on whose sides there are two panels, projecting sideways, all separated one from the other by folding lines; furthermore, said main panel is provided with two flaps projecting from its two free ends and separated from the abovementioned panel by folding lines perpendicular to the previous ones.

[0012] The display subject of the finding is further characterised in that it provides for some specific cutting lines and some folding lines and a precise arrangement of the gluing points on the two side panels, in such a manner that, when performing the required folding of a portion of said panels to form the support foot, the entire cardboard structure deforms due to the effect, in particular, of the elastic thrust action of the two folded flaps, deforms slightly, providing the front wall or mirror with the desired convex shape.

[0013] In order to make the understanding of the structure and the characteristics of the display subject of the finding clearer, following are descriptions of some of its possible embodiments, provided solely for exemplifying and nonlimiting purposes, with the help of the tables of drawings attached, wherein:

- Fig. 1 (tab. I) represents a perspective view of a first embodiment of the display subject of the finding;
- Fig. 2 (tab. II) represents a plan view of the die-cut element making up the structure of the display subject of fig. 1;
- Figures 3-5 (tab III) represent the folding steps of the die-cut element subject of fig. 2;
- figures 6-9 (tables IV-V) represent some perspective and side views of the display of fig. 1;
- Figures 10-11 (tab. VI) represent some perspective views, respectively, front and rear, of a second embodiment of the display subject of the finding;
- Fig. 12 (tab. VII) represents a plan view of the die-cut element making up the structure of the display subject of fig. 10;
- Figures 13-14 (tab. VIII) represent the folding steps of the die-cut element subject of fig. 12;
- Figures 15-16 (tab. IX) represent some perspective views, respectively front and rear, of a third embodiment of the display subject of the finding;
- Fig. 17 (tab. X) represents a plan view of the die-cut element making up the structure of the display subject of fig. 15;
- Figures 18-19 (tab. XI) represent the folding steps of the die-cut element subject of fig. 15;

- Figures 20-21 (tables I-II) represent a construction variant of the end flaps.

[0014] As observable in the assembly figures 1, 10 and 15, the displays of the type subject of the finding, indicated in their entirety by numbers 1.1, 1.2 and 1.3, comprise a substantially vertical convex wall 2.1, 2.2 and 2.3, supported by a support foot 3.1, 3.2 and 3.3 positioned at the back.

[0015] As observable in figures 1-9, a first embodiment of the display 1.1 subject of the finding (fig. 1) is made using a die-cut plate-shaped element, indicated in its entirety by number 10 (fig. 2), in which a main panel 11 is made, on whose sides there are two side panels 12 and 13 provided with two flaps 14.1 and 14.2, projecting from its two free sides, said panels and said flaps being connected to each other through the vertical 15.1 and horizontal 15.2 folding lines.

[0016] Three folding lines 16.1, 16.2, 16.3 are made on the side panel 12, converging to point 16, from which a horizontal cutting line 17 departs, extending up to the side end of said panel, thus delimiting three portions 12.1, 12.2 and 12.3.

[0017] An appendage 18 associated to an opening 19 is made on the central folding line 16.2.

[0018] Said panel 12 has a trimming 20, made up of three sections 20.1, 20.2 and 20.3, comprised between the centre folding line 16.2 and the external edge, where the sections 20.1 and 20.3 are inclined and parallel while the intermediate section 20.2 is arranged in a parallel manner with respect to the abovementioned external edge, the two sections 20.1 and 20.2 being comprised between the two folding lines 16.2 and 16.3.

[0019] A folding line 21.1 and a cutting line 21.2 are made on the side panel 13, converging to point 21 and substantially symmetric with respect to the previous lines 16.1 and 16.2.

[0020] The lower part of the cutting line 21.2 is shaped in a manner to define the appendage 22, provided with a folding line 22.1, with shape and dimensions substantially equivalent to the opposite appendage 18 and a projection 23.

[0021] Lastly, some grooves 24 are made at and oppositely positioned with respect to the appendage 22.

[0022] Having illustrated the structure and the shape of the sheet 10, below is a description of the method through which the display 1.1 is made (see figures 3-5).

[0023] First the flaps 14.1 and 14.2 are folded around the folding lines 15.2 (arrow F1).

[0024] Subsequently, the side panel 12 is folded, around its folding line 15.1 (arrow F2), which overlaps the abovementioned flaps, ending up fixed against the same by means of the gluing zones 21.

[0025] Further subsequently, the side panel 13 is folded, around its folding line 15.1 (arrow F3), which overlaps the other panel, ending up fixed against the same by means of the gluing zones Z2 and the gluing point Z3, which serves to join the two oppositely positioned ap-

pendages 18 and 22 one to the other, to form a reinforced tab 25, useful for the subsequent display opening/closing operations.

[0026] The preliminary machining of display 1.1 is thus completed and the flattened display (see fig. 5) can be packaged and delivered to the end user.

[0027] When the user receives the flattened panel, all that is required is to simply press on the grooves 24 which, being arranged at the opening 19 below, deform and facilitate grip on the reinforced tab 25 which, when lifted, draws towards the external the two portions 12.1-12.2 of the panel 12, which provide a wedge-shaped element 26, forming the support foot 3.1 (see figures 6), which is held blocked through the notch at point "K" between the portion 12.3 of the abovementioned panel and the projection 23 of the panel 13.

[0028] As observable in figures 10-14, a second embodiment of the display 1.2 subject of the finding is made by means of a die-cut plate-shaped element, indicated in its entirety by number 30 (fig. 2), in which a main panel 11 is made, on whose sides there are two side panels 31 and 32 and provided with two flaps 14.1 and 14.2, projecting from the two free sides, said panels and said flaps being connected through the vertical 15.1 and the horizontal 15.2 folding lines.

[0029] Two triangular portions 31.1 and 32.1 are made on the two side panels, substantially arranged symmetrically with respect to the main panel 11 and comprised between the external edges 33 and 34 of the two abovementioned panels and the inclined folding lines 35 and 36, ending with two cutting lines 37 and 38 (see fig. 12).

[0030] A projecting strip 39 and 40 and a recess 41 and 42 are made on each of the two side edges 33 and 34, arranged in an alternating manner, the strip and the oppositely positioned corresponding recess having their internal sides 43 and 44 being shaped to form a saw tooth.

[0031] Having illustrated the structure and the shape of the sheet 30 below is a description of the method through which the display 1.2 is made (see figures 13-14).

[0032] First the flaps 14.1 and 14.2 are folded around the folding lines 15.2 (arrow F10).

[0033] Subsequently the side panel 31 is folded around its folding line 15.1 (arrow F20), which overlaps the abovementioned flaps, ending up fixed against the same by means of the gluing zones Z10.

[0034] Further subsequently, the side panel 32 is folded, around its folding line 15.2 (arrow F30), which overlaps the previous panel, ending up fixed against the same by means of the gluing zones Z20.

[0035] The preliminary machining of the display 1.2 is thus completed and the flattened display (see fig. 14) can be packaged and delivered to the end user.

[0036] When the user receives the flattened panel, all that is required is to simply lift the two triangular portions 31.1 and 32.1 and interlock them one to the other inserting the strips 39 and 40 in the corresponding recesses 43 and 44 to provide the wedge-shaped element 45 forming the support foot 3.2, which is held blocked due to the

notch, at the points C1 and C2, of the saw teeth present on the sides 43 and 44.

[0037] As visible in figures 15-19, a third embodiment of the display 1.3 subject of the finding is made by means of a die-cut plate-shaped element, indicated in its entirety by number 50 (fig. 17), in which a main panel 11 is made, on whose sides there is a side panel 51 and a flap 52 and provided with two flaps 14.1 and 14.2, projecting from the two free sides, said panels and said flaps being connected to each other through the vertical 15.1 and horizontal 15.2 folding lines.

[0038] A cusp-shaped strip 53 is made on the side panel 51, foldable along the folding line 54 and a triangular portion 55 foldable along the folding lines 56.1 and 56.2, arranged at the centreline of said strip, said portion being separated from the abovementioned panel through the cutting lines 57 and 58.

[0039] Said portion 55 ends with an inclined base 59 and it is provided with a tab 60, foldable on the folding line 61.

[0040] Having illustrated the structure and the shape of the sheet 50, below is a description of the method through which the display 1.3 is made (see figures 18-19).

[0041] Firstly, the flaps 14.1 and 14.2 are folded around the folding lines 15.2 (arrow F40).

[0042] Subsequently, first the flap 52 is folded around its folding line 15.1 (arrow F50) and then the panel 51 is folded along its folding line 15.1 (arrow 60), which overlaps the abovementioned flaps ending up fixed against the same by means of the gluing zones Z30 and Z40.

[0043] The preliminary machining of the display 1.3 is thus completed and the flattened display (see fig. 19) can be packaged and delivered to the end user.

[0044] When the user receives the flattened display all that is required is to lift and fold the shaped strip 53 and the triangular portion 55 at 90°, which thus shall be interlocked, hence forming the support foot 3.3, reinforced further by the folded tab 60 (fig. 16).

[0045] Lastly, as visible in figures 20 and 21, the finding provides for the panel 11 to be provided, on two external sides, with at least a pair of flaps 14a, 14b which can be folded over themselves to enhance the convex effect of the mirror.

[0046] It is clarified that the material used, alongside the shapes and dimensions of the display may vary depending of the construction or commercial requirements without, for this reason, departing from the scope of the following claims.

Claims

1. DISPLAY PROVIDED WITH A CONVEX MIRROR, made of flexible cardboard or of any other material suitable for the purpose, of the type made up of a plane (2) arranged in a substantially vertical manner, kept in position by a support foot (3) positioned at the back, said display **characterised in that** it is

made by means of a single element made of flexible material.

2. DISPLAY PROVIDED WITH A CONVEX MIRROR, according to claim 1, **characterised in that** it is obtained using only one sheet of flexible material, in particular thin cardboard, and **in that** it is made by means of only one die-cutting operation, to define its profile, the cutting lines and the folding lines.

3. DISPLAY (1.1), according to claims 1 and 2, **characterised in that** it is made using a die-cut plate-shaped element (10), in which a main panel (11) is made, on whose sides there are two side panels (12, 13), and provided with two flaps (14.1, 14.2), projecting from the two free sides, said panels and said flaps being reciprocally connected through the vertical (15.1) and horizontal (15.2) folding lines.

4. DISPLAY, according to claim 3, **characterised in that** on the side panel (12) three folding lines (16.1, 16.2, 16.3) are made, converging to point (16), from which a cutting line (17) departs horizontally and extends up to the side end of said panel, delimiting three portions (12.1, 12.2, 12.3).

5. DISPLAY, according to claim 4 **characterised in that** an appendage (18) associated to an opening (19) is made on the central folding line 16.2.

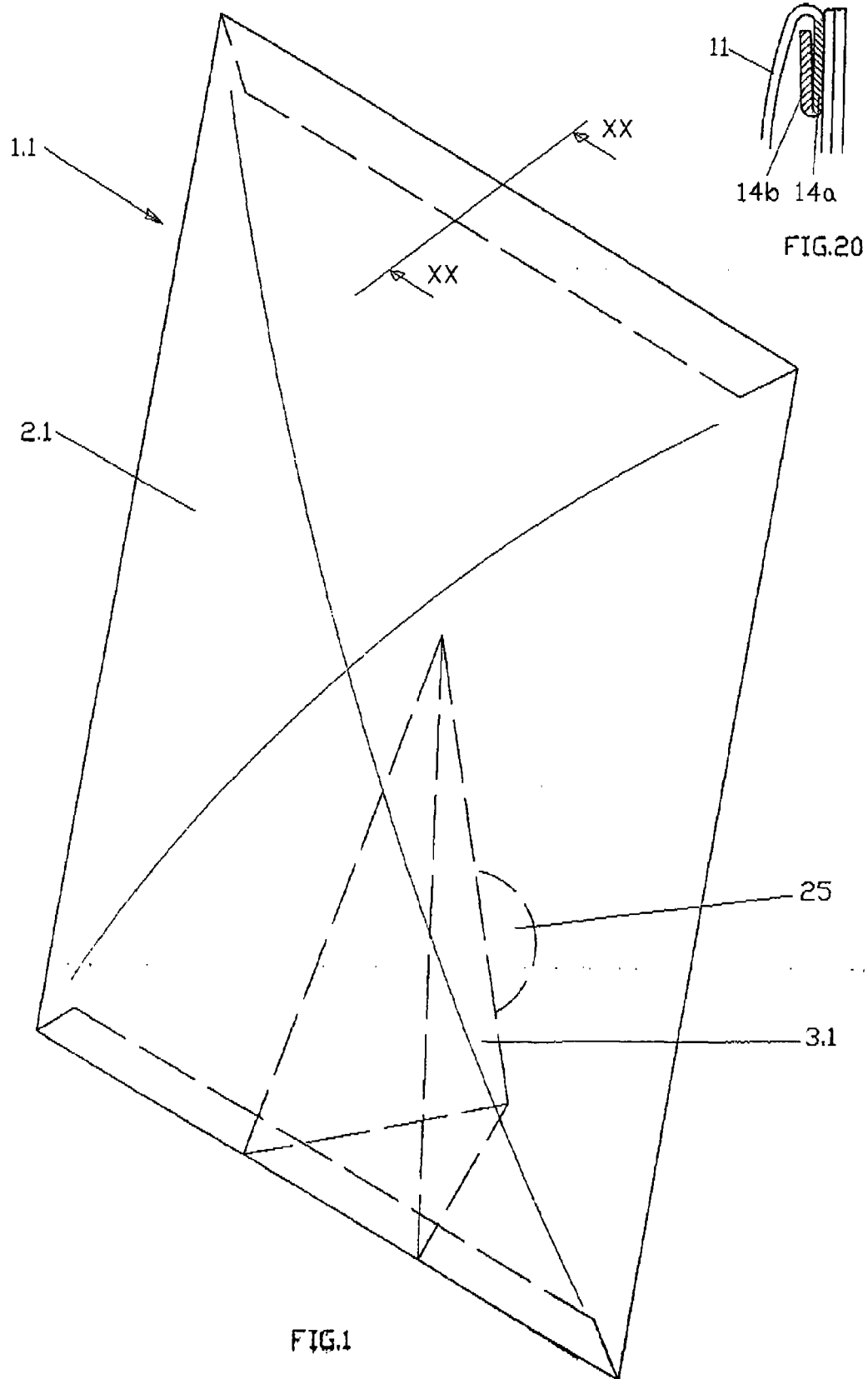
6. DISPLAY, according to claim 4, **characterised in that** the panel (12) has a trimming (20), made up of three sections (20.1, 20.2, 20.3), comprised between the central folding line (16.2) and the external edge, the sections (20.1, 20.3) being inclined and parallel, while the intermediate section (20.2) is arranged in a parallel manner with respect to the abovementioned external edge, where the two sections (20.1, 20.2) are comprised between the two folding lines (16.2, 16.3).

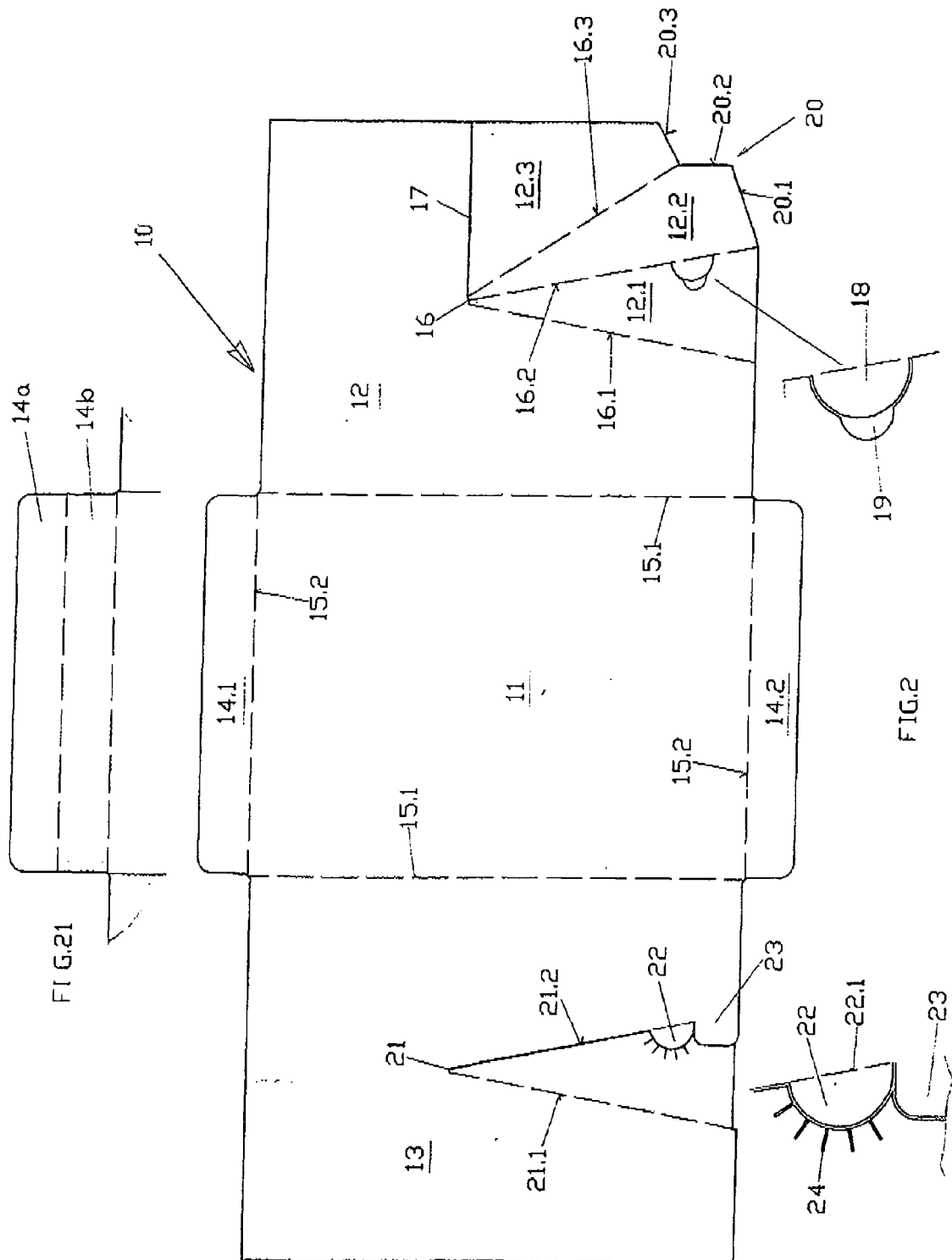
7. DISPLAY, according to claims 3 and 4, **characterised in that** a folding line (21.1) and a cutting line (21.2) are made on the side panel (13), converging to point (21) and substantially symmetrical with respect to the lines (16.1, 16.2), the lower part of the cutting line (21.2) being shaped in such a manner to define an appendage (22), provided with a folding line (22.1), with shape and dimensions substantially equivalent to the opposite appendage (18), a projection (23) and some grooves (24) being arranged oppositely positioned with respect to the abovementioned appendage (22).

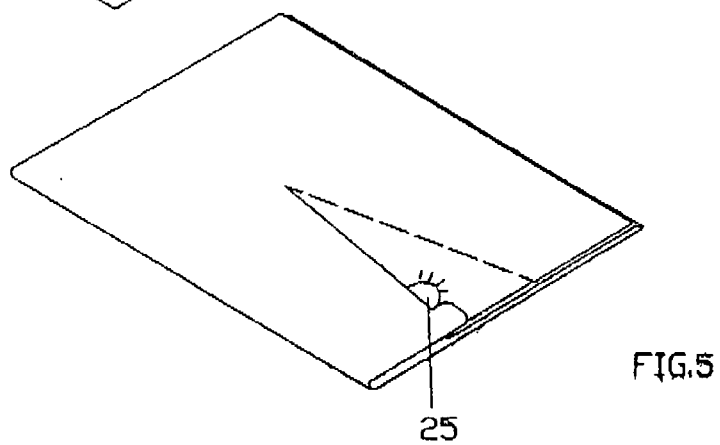
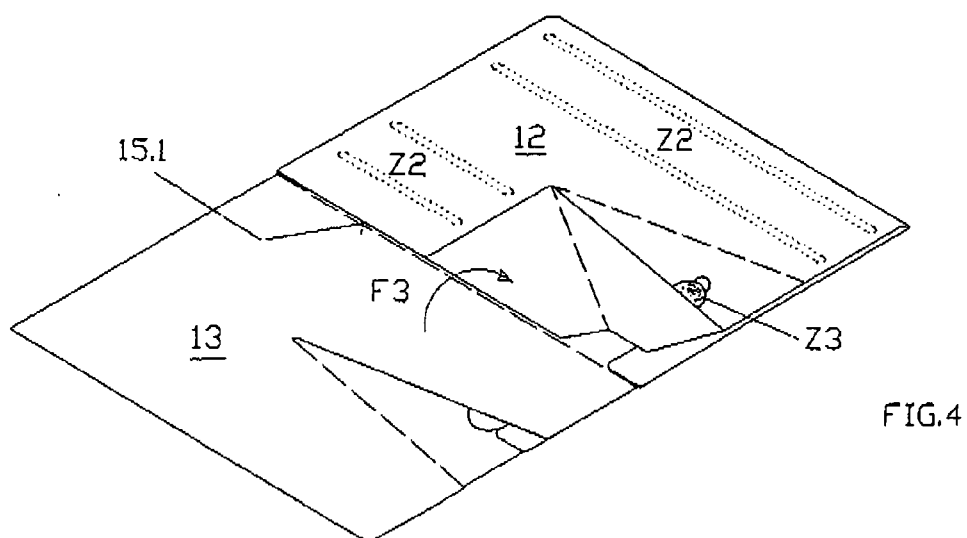
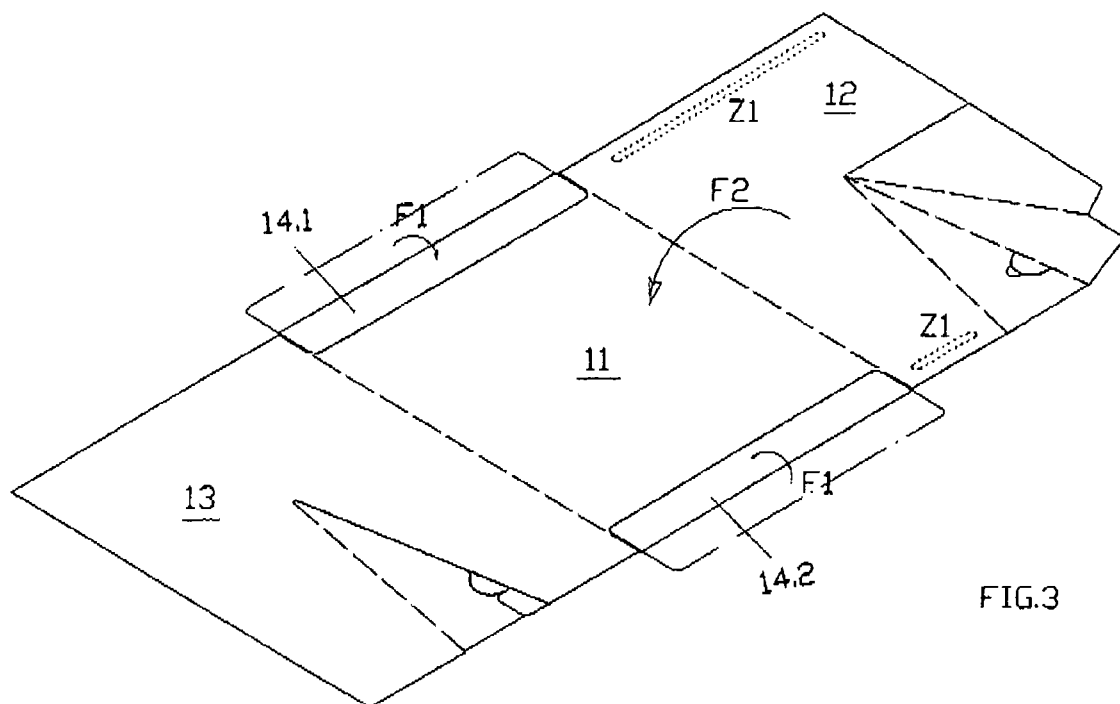
8. DISPLAY, according to one or more of claims 3-7, **characterised in that** the two oppositely positioned appendages (18, 22) are joined to each other to form a reinforced tab (25).

9. DISPLAY (1.2), according to claims 1 and 2, **characterised in that** it is made using a die-cut plate-shaped element (30) in which a main panel (11) is made, on whose sides there are two side panels (31, 32) and provided with two flaps (14.1, 14.2), projecting from its two free sides, said panels and said flaps are connected to each other through vertical (15.1) and horizontal (15.2) folding lines. 5
10. DISPLAY, according to claim 9, **characterised in that** two triangular portions (31.1, 32.1) are made on its two side panels (31, 32), arranged in a substantially symmetric manner with respect to the main panel (11) and also comprised between the external edges (33, 34) of the two abovementioned panels and the inclined folding lines (35, 36), and ending with two cutting lines (37, 38). 10 15
11. DISPLAY, according to claim 10, **characterised in that** a projecting strip (39, 40) and a recess (41, 42) are made on each of the two external edges (33, 34), arranged in an alternating and oppositely positioned manner, wherein the strip and the corresponding opposite recess have their internal sides (43, 44) shaped as a saw tooth. 20 25
12. DISPLAY (1.3), according to claims 1 and 2, **characterised in that** it is made using a die-cut plate-shaped element (50) in which a main panel (11) is made, on whose sides there is a side panel (51) and a flap (52) and provided with two flaps (14.1, 14.2) projecting from its two free sides, said panels and said flaps being reciprocally connected through the vertical (15.1) and horizontal (15.2) folding lines. 30 35
13. DISPLAY, according to claim 12, **characterised in that** a cusp-shaped strip (53) is made on the side panel (51), foldable along the folding line (54) and a triangular portion (55), foldable along the folding lines (56.1, 56.2), positioned at the centreline of said strip, said portion being separated from the abovementioned panel through cutting lines (57, 58), wherein the portion (55) ends with an inclined base (59) and is provided with a tab (60), foldable on the folding line (61). 40 45
14. DISPLAY, according to claims 3, 9 and 12, **characterised in that** the panel (11) is provided, on the two external sides, with at least a pair of flaps (14a, 14b), folded over themselves. 50

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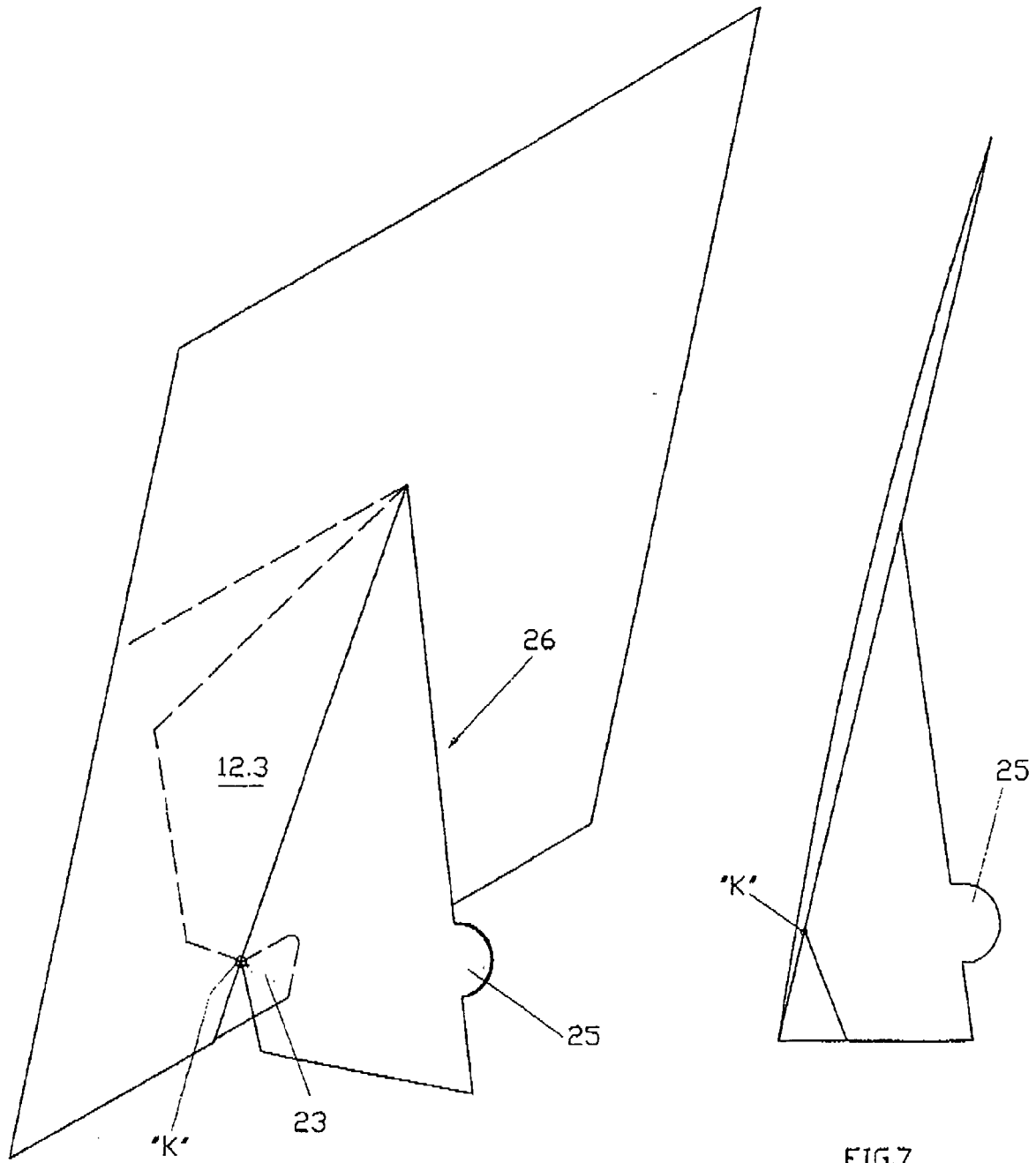


FIG.6

FIG.7

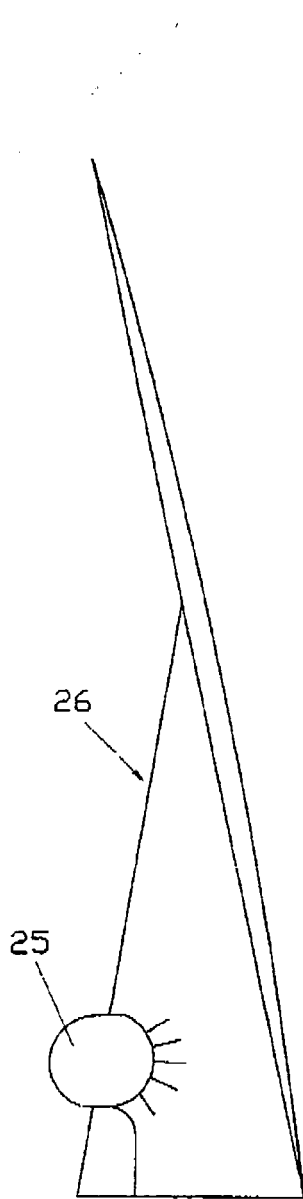


FIG. 9

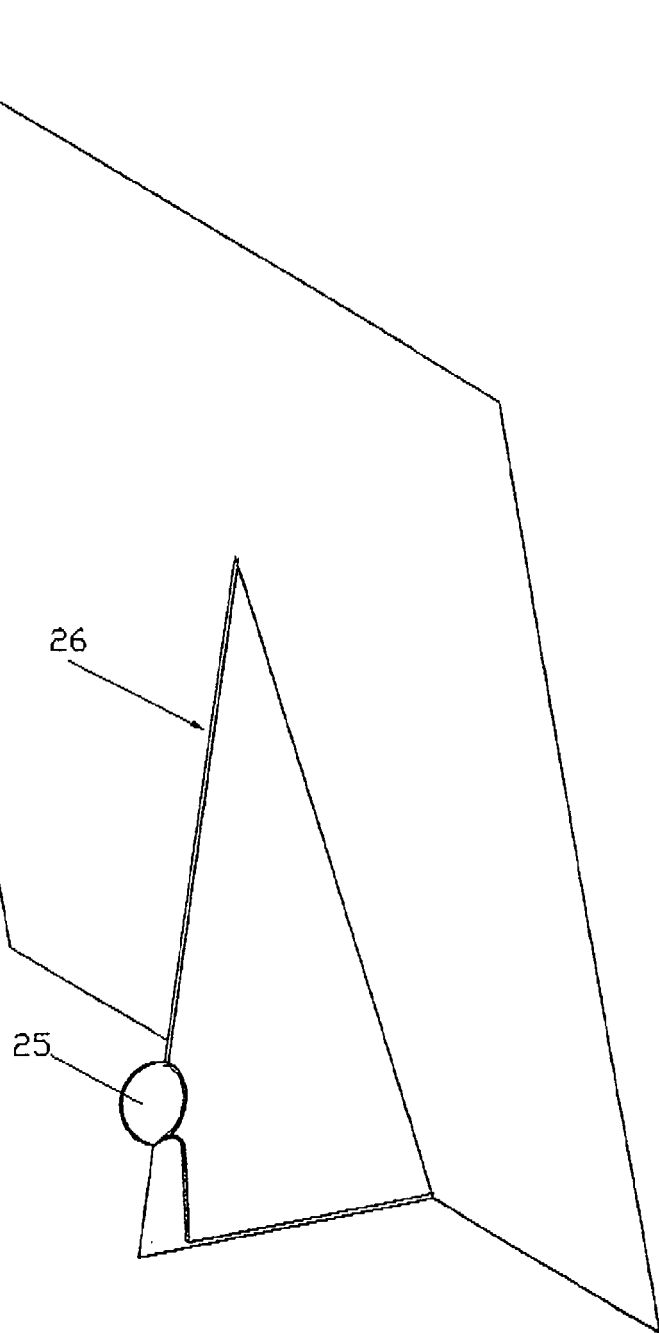


FIG. 8

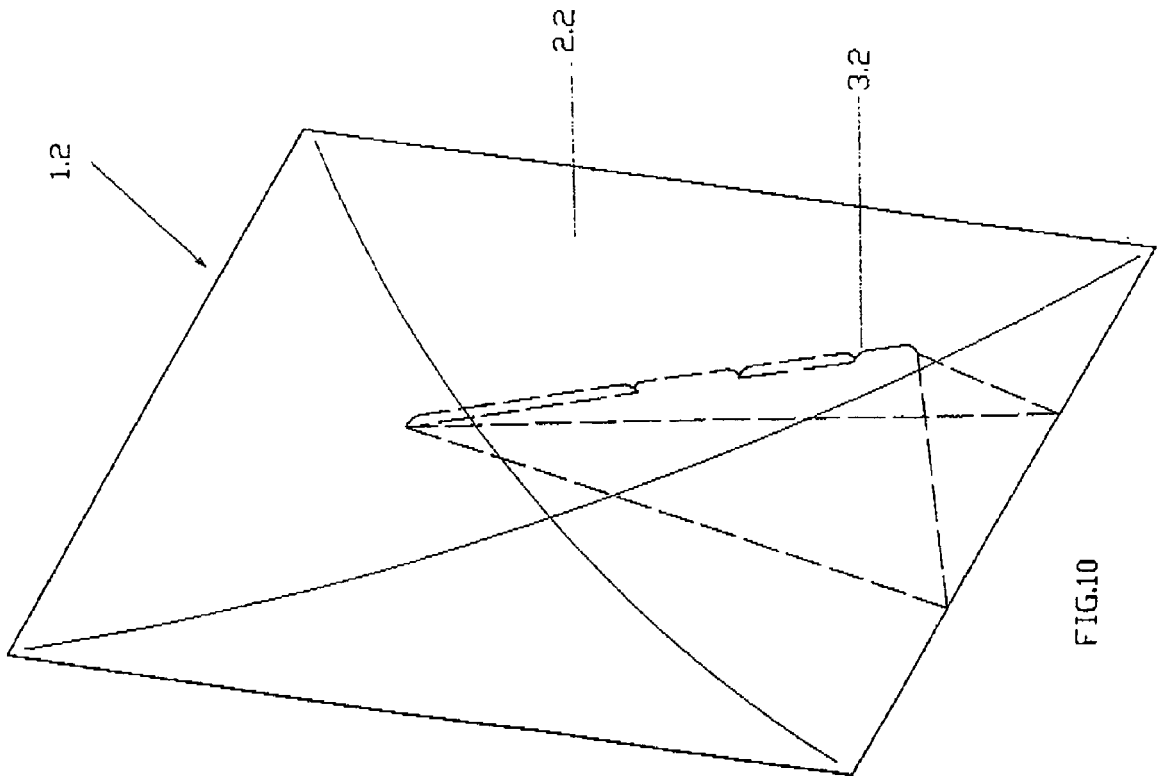


FIG.10

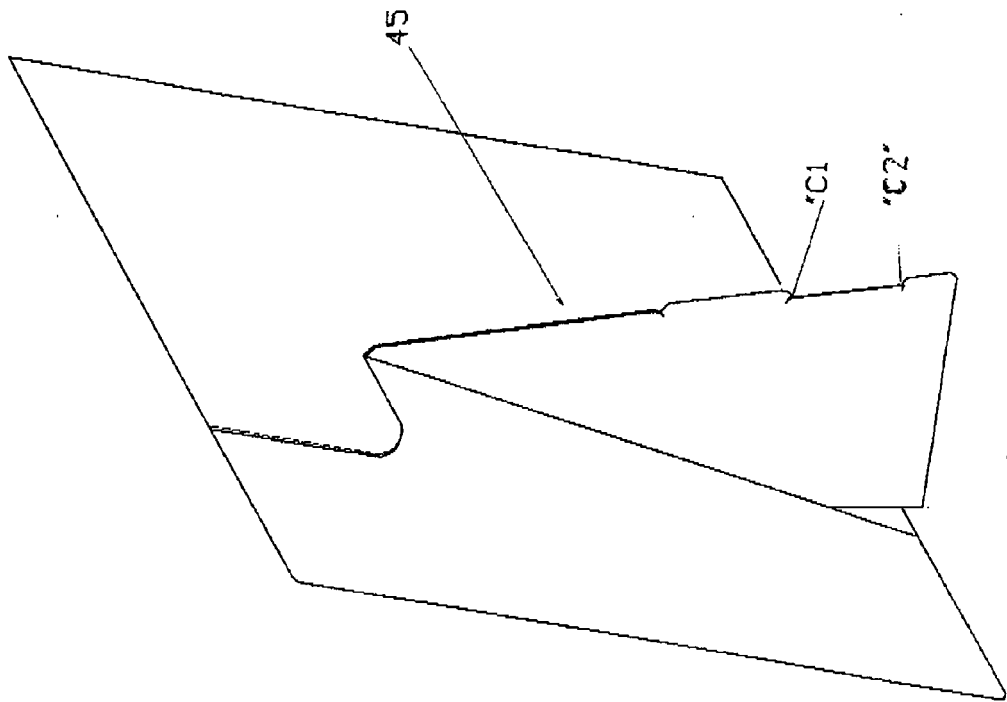


FIG.11

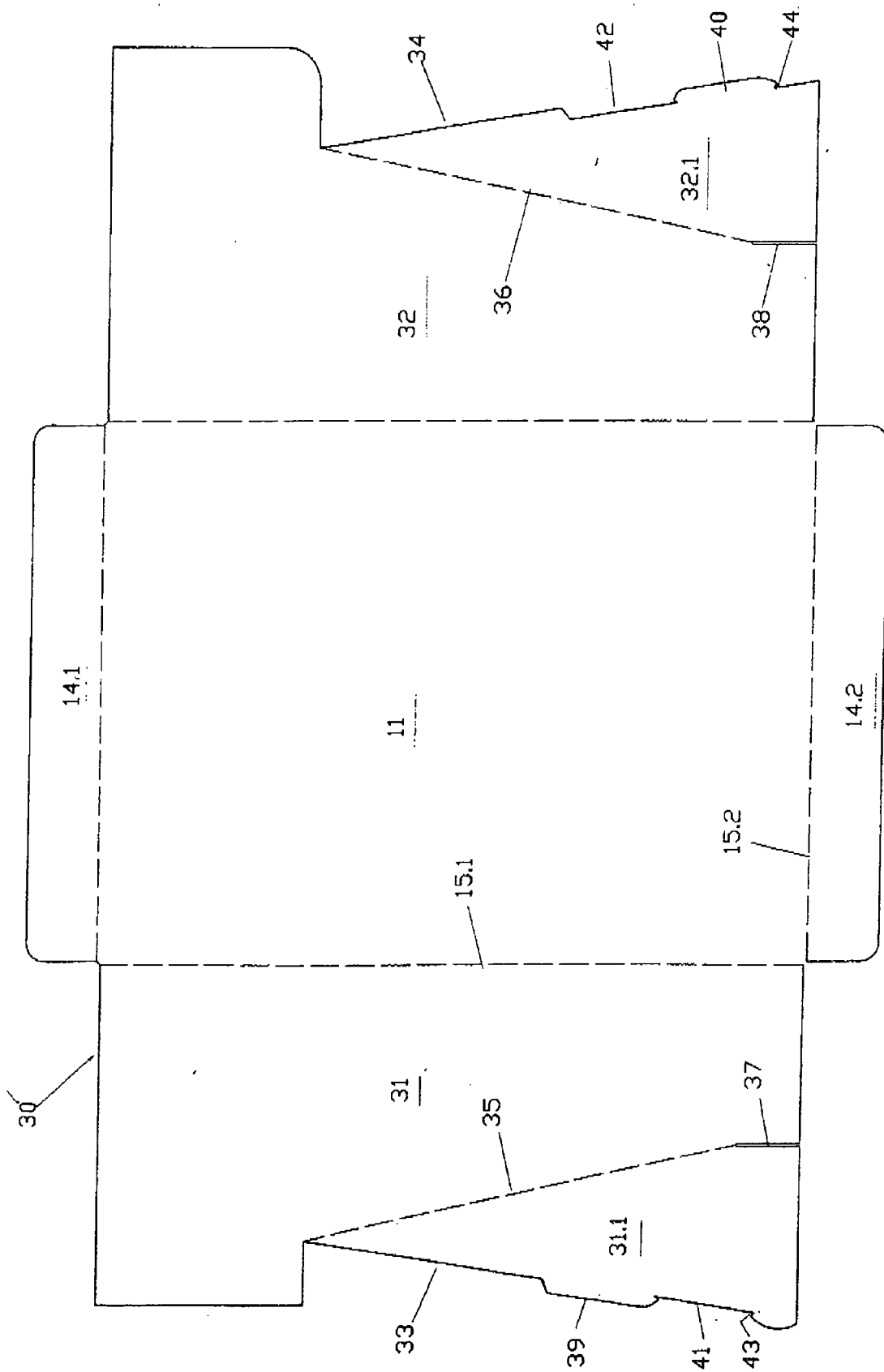


FIG. 12

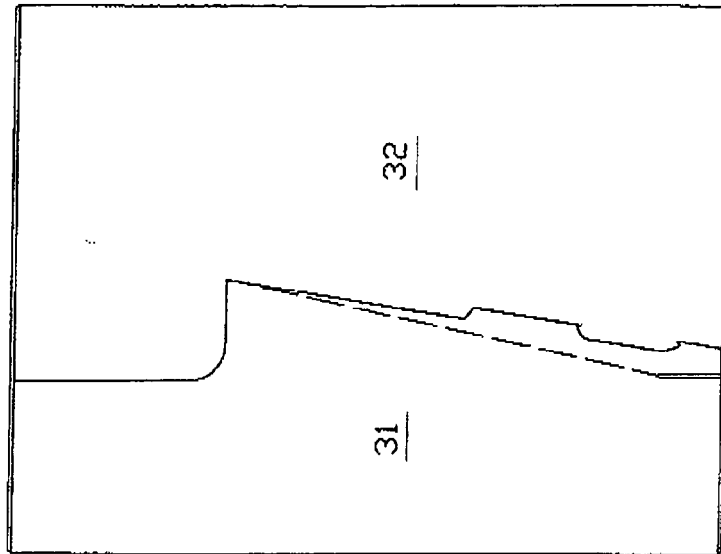


FIG.14

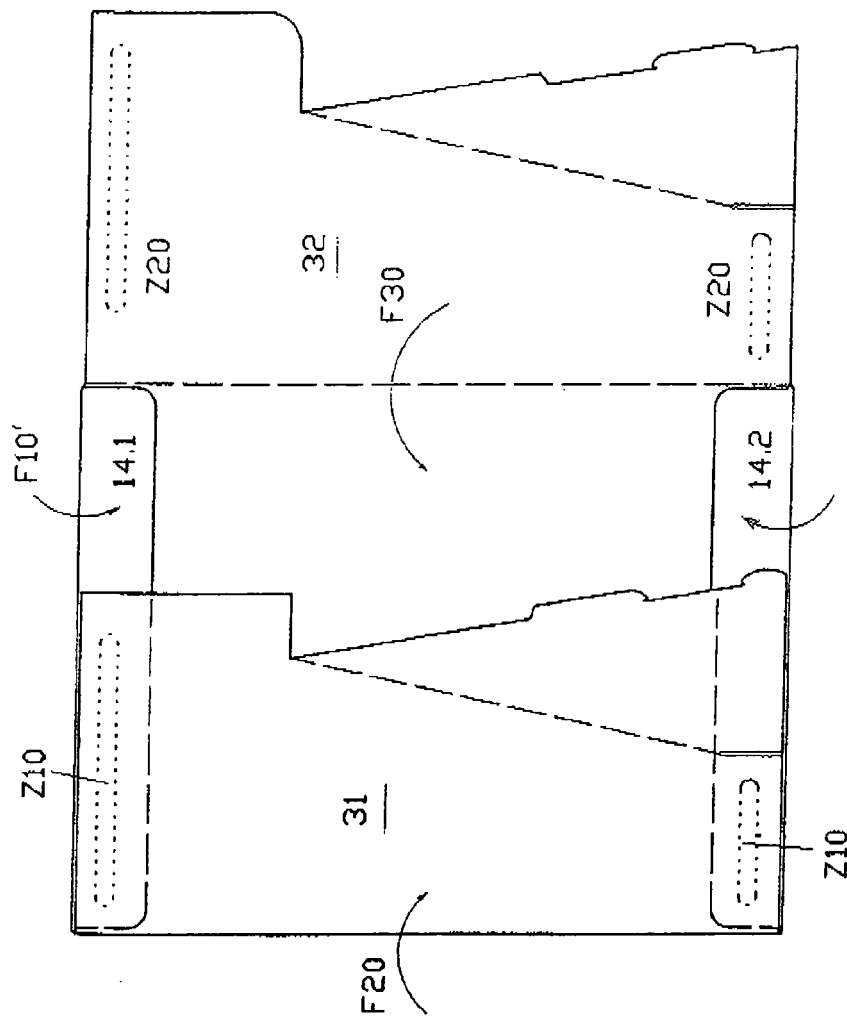
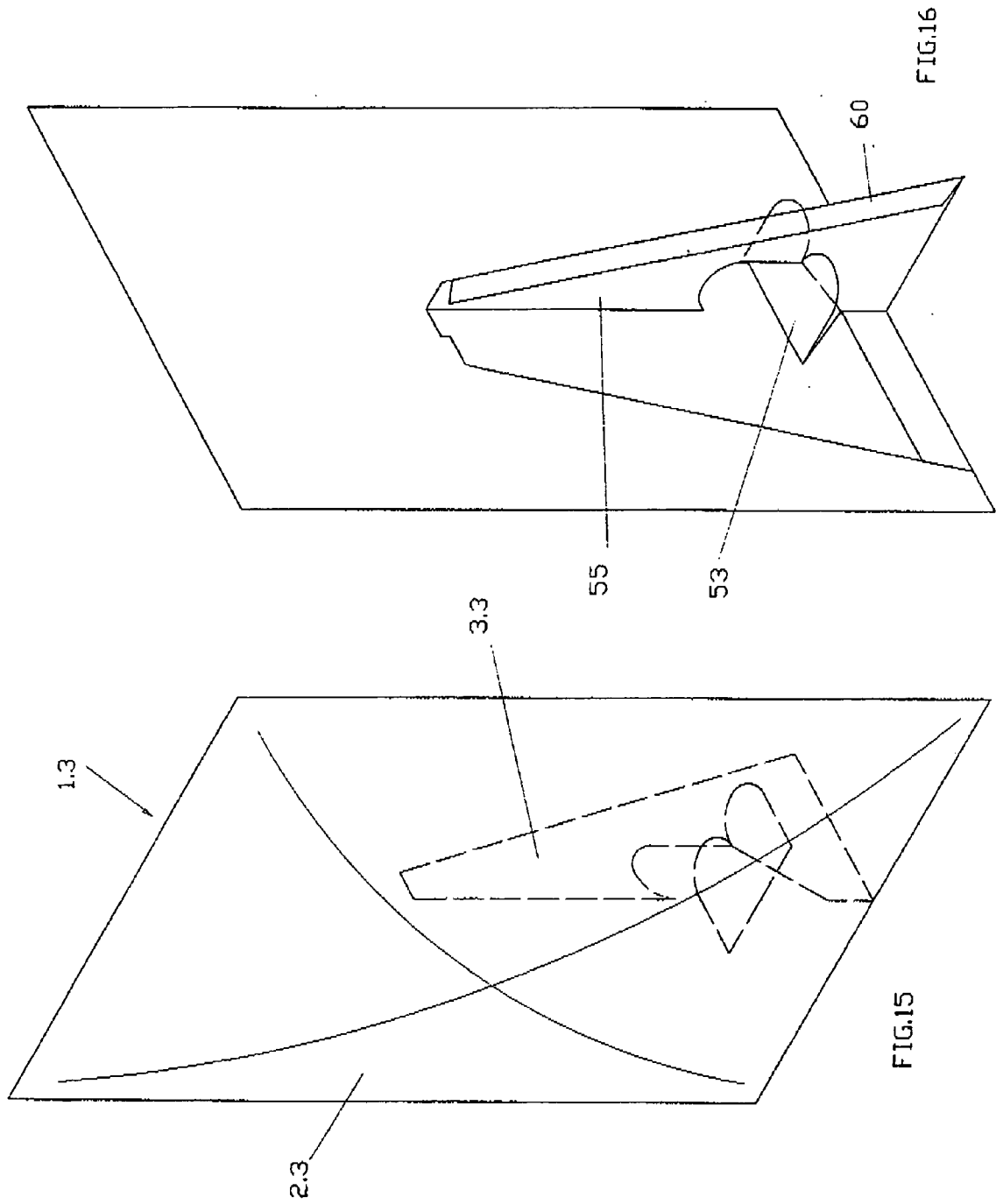
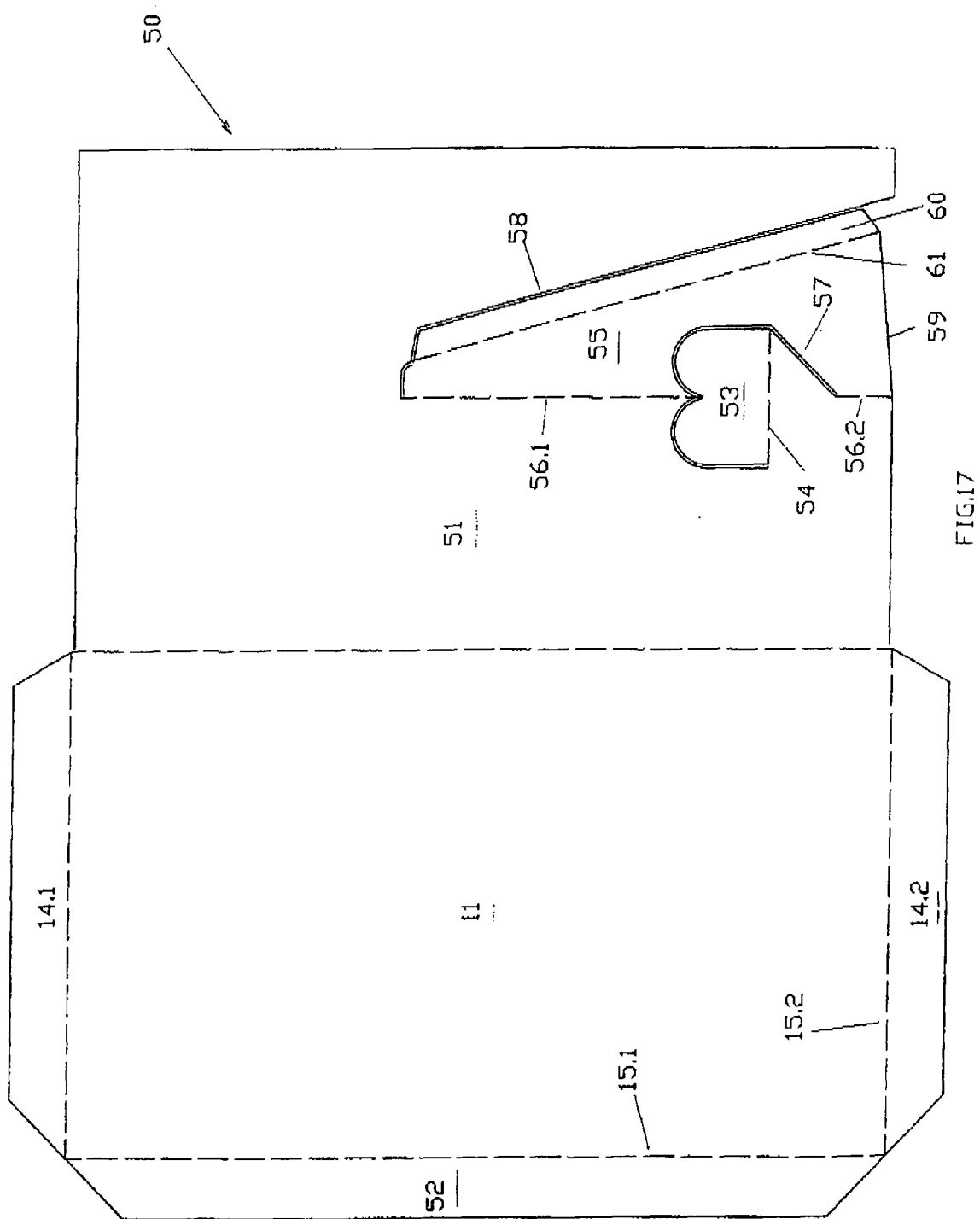


FIG.13





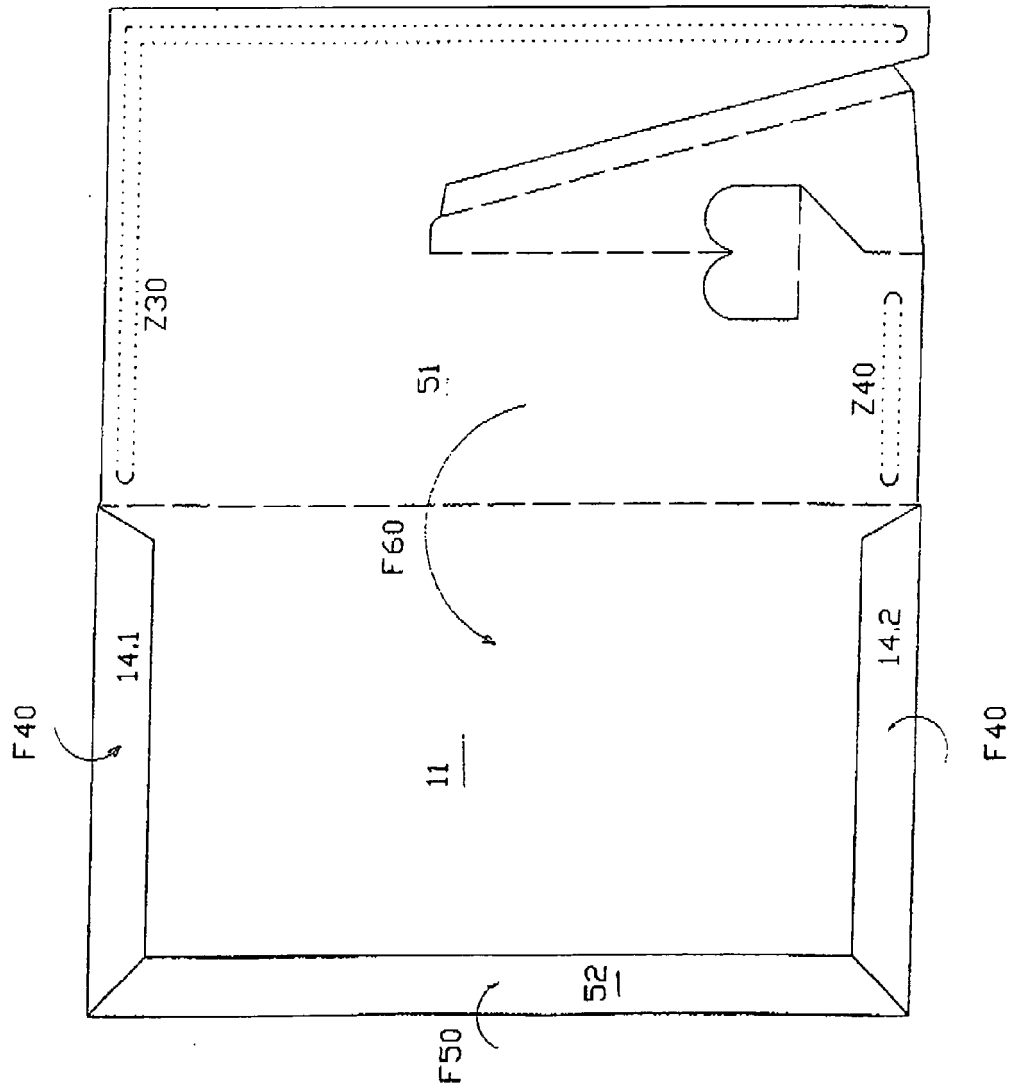


FIG. 18

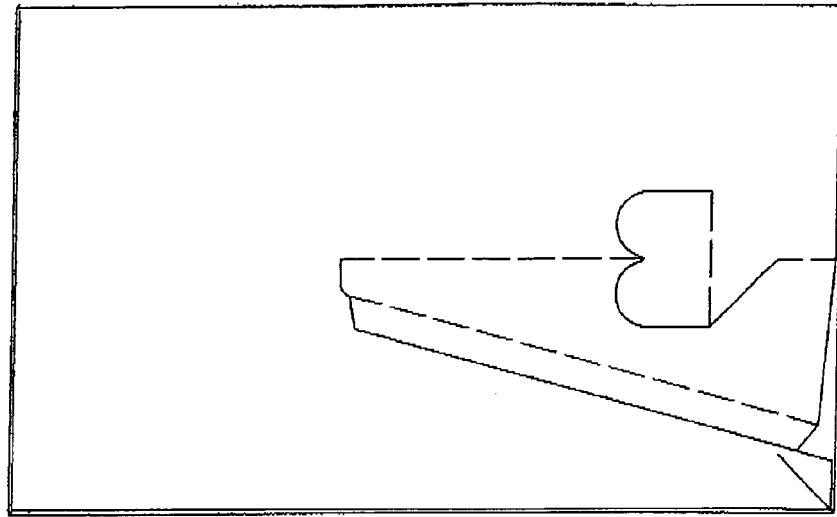


FIG. 19