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(54) **Rigid packet of cigarettes**

(57) A rigid packet (1) of cigarettes, having : a rigid, parallelepiped-shaped container (2) having a front wall (11), a rear wall (12), a top wall (9), a bottom wall (10), and two lateral walls (13), each formed by an inner lateral panel (13'') and an outer lateral panel (13') superimposed and glued to each other; an inner package (3) which encloses a group (4) of cigarettes, is housed inside the container (2), and has a longitudinal dimension smaller than the longitudinal dimension of the container (2); and a supporting system (24) which is integral with the container (2), forms a bottom support for the inner package (3), and has at least one first tab (25) hinged along a first fold line (26) to an inner lateral panel (13'') of a lateral wall (13), and folded, with respect to the inner lateral panel (13''), inwards of the container (2), and a second tab (27) which is hinged along a second fold line (28) to the first tab (25), is folded squarely with respect to the first tab (25) so as to be parallel to and a given distance from the bottom wall (10), and forms the bottom support for the inner package (3).

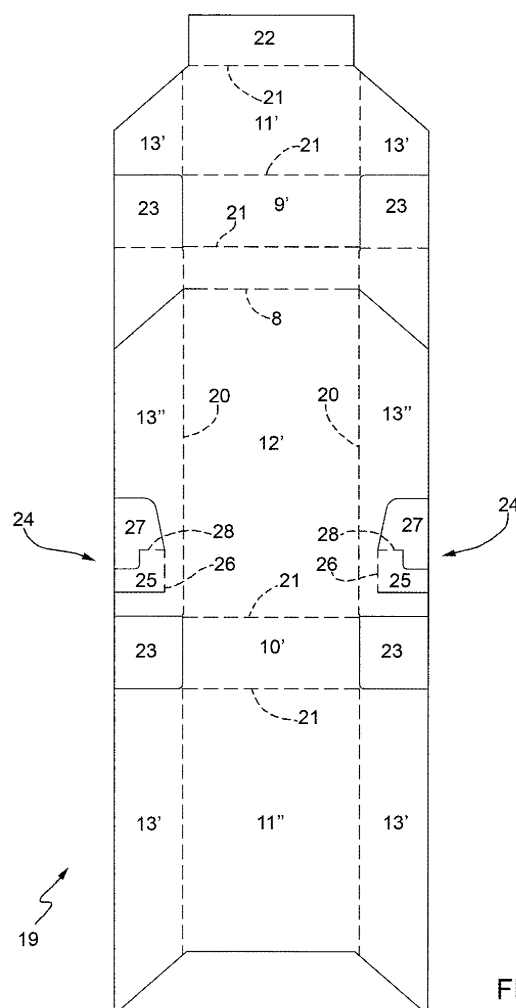


FIG. 4

Description

TECHNICAL FIELD

[0001] The present invention relates to a rigid packet of cigarettes.

BACKGROUND ART

[0002] Rigid packets of cigarettes are currently the most widely marketed, in that they are easy to produce, easy and practical to use, and provide good protection for the cigarettes inside. A rigid, hinged-lid packet of cigarettes comprises an inner package defined by a group of cigarettes wrapped in a sheet of inner packing material; and a rigid outer container, which encloses the inner package, has an open top end, and comprises a lid hinged to rotate between an open position and a closed position opening and closing the open end respectively.

[0003] The outer container is normally substantially the same size as the inner package, so as to house the inner package snugly. But, in some embodiments, the outer container is much larger than the inner package, as, for example, when producing a packet of cigarettes containing a smaller number of cigarettes, using an existing blank of standard size, or to create a gap inside the outer container, in which to house an accessory (e.g. a lighter) or to use as an ashtray.

[0004] Patent US4241827A1 and patent application EP1023991A2 describe a rigid, hinged-lid packet of cigarettes comprising a supporting system, which is integral with the outer container, forms a bottom support for an inner package shorter in height than the container, and comprises two pairs of tabs resting on the bottom wall, hinged to inner panels of the lateral walls, and folded inwards of the container with respect to the inner panels.

[0005] The supporting system described in Patent US4241827A1 and in patent application EP1023991A2 has the drawback of failing to adequately support the inner package, the bottom of which only rests on the top edges of the four tabs, which are very small. In this connection, it is important to remember that the inner package is not normally glued and encloses a group of loose cigarettes, so that, when the inner package is not properly supported at the bottom, the cigarettes in the middle may produce local deformation of the packing material, thus causing the bottom of the inner package to collapse. Moreover, when the inner package is pressed downwards (as, for example, when the user withdraws a cigarette), the tabs may collapse under combined compressive and bending stress, thus resulting in collapse of the inner package.

DISCLOSURE OF THE INVENTION

[0006] It is an object of the present invention to provide a rigid packet of cigarettes designed to eliminate the above drawbacks, and which at the same time is cheap

and easy to produce.

[0007] According to the present invention, there is provided a rigid packet of cigarettes as claimed in the accompanying Claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] A number of non-limiting embodiments of the present invention will be described by way of example with reference to the accompanying drawings, in which:

Figure 1 shows a front view in perspective of a rigid packet of cigarettes in accordance with the present invention in a closed configuration;

Figure 2 shows a front view in perspective of the Figure 1 packet of cigarettes in an open configuration;

Figure 3 shows a rear view in perspective of the Figure 1 packet of cigarettes in a closed configuration;

Figure 4 shows a spread-out view of a blank from which to form an outer container of the Figure 1 packet of cigarettes;

Figure 5 shows a partly sectioned view in perspective, with parts removed for clarity, of a bottom portion of the Figure 1 packet of cigarettes;

Figure 6 shows a partly sectioned front view of the bottom portion in Figure 5;

Figure 7 shows a cross section of the bottom portion in Figure 5;

Figures 8-13 show spread-out views of alternative embodiments of the Figure 4 blank.

PREFERRED EMBODIMENTS OF THE INVENTION

[0009] Number 1 in Figure 1 indicates as a whole a rigid packet of cigarettes, which comprises a parallelepiped-shaped outer container 2; and an inner package 3 enclosing a group 4 of cigarettes and housed inside container 2. Inner package 3 is parallelepiped-shaped, and comprises a sheet 5 of foil packing material wrapped about group 4 of cigarettes.

[0010] Container 2 has an open top end 6, and comprises a cup-shaped lid 7 hinged to container 2 along a hinge 8 to rotate, with respect to container 2, between an open position (Figure 2) and a closed position (Figures 1 and 3) opening and closing open top end 6 respectively.

[0011] When lid 7 is in the closed position, container 2 is in the form of a rectangular parallelepiped comprising a top wall 9 and a bottom wall 10 opposite and parallel to each other; a front wall 11 and a rear wall 12 opposite and parallel to each other; and two opposite, parallel lateral walls 13. Four longitudinal edges 14 are defined between lateral walls 13 and front and rear walls 11, 12; and eight transverse edges 15 are defined between top and bottom walls 9, 10 and front, rear, and lateral walls 11, 12, 13. More specifically, four major transverse edges 15 are defined between top and bottom walls 9, 10 and front and rear walls 11, 12; and four minor transverse

edges 15 are defined between top and bottom walls 9, 10 and lateral walls 13.

[0012] Packet 1 also comprises a collar 16, which is folded into a U and connected (glued) to the inside of container 2, and projects partly outwards of open top end 6 to engage a corresponding inner surface of lid 7 when lid 7 is in the closed position. Collar 16 comprises a front wall 17 positioned contacting front wall 11 of container 2; and two lateral walls 18 located on opposite sides of front wall 17 and positioned contacting lateral walls 13 of container 2.

[0013] As shown in Figure 4, container 2 is formed from a flat, substantially elongated rectangular blank 19, the parts of which are indicated, where possible, in the following description using the same reference numbers, with superscripts, as for the corresponding parts of container 2.

[0014] Blank 19 has two longitudinal fold lines 20, and a number of transverse fold lines 21 defining, between the two longitudinal fold lines 20, a panel 11' forming a top portion (in particular, the lid 7 portion) of front wall 11; a panel 9' forming top wall 9; a panel 12' forming rear wall 12; a panel 10' forming bottom wall 10; and a panel 11'' forming a bottom portion (in particular, the container 2 portion) of front wall 11.

[0015] Panels 11' and 11'' each comprise parts of two outer lateral panels 13', which are located on opposite sides of panels 11', 11'', are separated from panels 11', 11'' by longitudinal fold lines 20, and form respective outer portions of lateral walls 13. Panel 12' comprises two inner lateral panels 13'', which are located on opposite sides of panel 12', are separated from panel 12' by longitudinal fold lines 20, and form respective inner portions of lateral walls 13. When folding blank 19, each outer lateral panel 13' is folded onto and glued to the corresponding inner lateral panel 13'' to form a lateral wall 13. In other words, each lateral wall 13 of container 2 is defined by an outer lateral panel 13' superimposed on and glued to an inner lateral panel 13''.

[0016] Panel 11' has a reinforcing flap 22 which, when folding blank 19, is folded 180° and glued to panel 11'. Each inner lateral panel 13'' has two rectangular tabs 23 located at opposite ends of inner lateral panel 13'' and separated from inner lateral panel 13'' by two transverse fold lines 21. When folding blank 19, each tab 23 is folded squarely with respect to relative inner lateral panel 13'', and is superimposed on and glued to an inner surface of a relative panel 9', 10' to define an inner portion of a relative wall 9, 10.

[0017] As shown in Figures 5, 6 and 7, packet 1 comprises a supporting system 24 integral with container 2 and forming a bottom support for inner package 3, which is shorter in height (i.e. longitudinally) than container 2. For each lateral wall 13, supporting system 24 comprises a tab 25 hinged to corresponding inner lateral panel 13'' along a fold line 26, and folded squarely with respect to inner lateral panel 13'' and inwards of container 2; and a tab 27, which is hinged to tab 25 along a fold line 28

perpendicular to fold line 26, is folded squarely with respect to tab 25, so as to be parallel to and a given distance from bottom wall 10, and serves to support the bottom of inner package 3. It is important to note that each tab 27 is located over the corresponding tab 25, which is therefore located on the opposite side of tab 27 to inner package 3. This is an important feature in that, being located under the corresponding tab 27, each tab 25 provides for firmly supporting tab 27.

[0018] In the Figure 5, 6 and 7 embodiment, fold lines 26 of tabs 25 are parallel to longitudinal edges 14, and fold lines 28 of tabs 27 are parallel to major transverse edges 15.

[0019] Each tab 27 has a transverse dimension equal to the shorter transverse dimension of container 2, and so contacts both front wall 11 and rear wall 12. This is an important feature, in that it means the opposite ends of tab 27 are supported firmly by both front wall 11 and rear wall 12. In other words, each tab 27 is supported centrally by corresponding tab 26, and laterally by front wall 11 and rear wall 12, and is therefore extremely stable and capable of supporting inner package 3 without buckling, even when inner package 3 is pressed downwards (as, for example, when the user withdraws a cigarette from inner package 3).

[0020] In a different embodiment, not shown, each tab 27 only contacts either front wall 11 or rear wall 12; and, in a further embodiment not shown, each tab 27 contacts neither front wall 11 nor rear wall 12.

[0021] Each fold line 26 is preferably located a given distance from both the longitudinal edges 14 bounding lateral wall 13, so that each tab 25 is located at a central portion of tab 27, to provide balanced support (i.e. close to the barycentre) of tab 27.

[0022] As shown in Figure 4, tabs 25 and 27 are cut out of inner lateral panels 13''. In other words, tabs 25 and 27 involve no additional parts to, and are simply cut from, a standard blank 19.

[0023] Each tab 27 preferably has a bevelled/rounded corner at a longitudinal edge 14 bounding lateral wall 13, to prevent mechanical interference between tab 27 and longitudinal edge 14 when folding blank 19 to form container 2.

[0024] In the Figure 4 embodiment, each tab 25 and each tab 27 are L-shaped; and the dividing line between each tab 25 and tab 27 is "step-shaped" and comprises fold line 28 and an L-shaped cut.

[0025] In an alternative embodiment shown in Figure 8, each tab 25 is in the form of a right-angle trapezium, and each tab 27 is L-shaped; and the dividing line between each tab 25 and tab 27 is "step-shaped" and comprises fold line 28 and an L-shaped cut.

[0026] In an alternative embodiment shown in Figure 9, each tab 25 is in the form of a right-angle triangle, and each tab 27 in the form of a right-angle trapezium; and the dividing line between each tab 25 and tab 27 is straight and comprises fold line 28 and a straight cut.

[0027] In an alternative embodiment shown in Figure

10, each tab 25 is rectangular, and each tab 27 is in the form of a right-angle trapezium; and the dividing line between each tab 25 and tab 27 is straight and defined entirely by fold line 28.

[0028] In an alternative embodiment shown in Figure 11, each tab 25 is roughly rectangular, and each tab 27 is roughly in the form of a right-angle trapezium with a U-shaped appendix inserted inside tab 25; and the dividing line between each tab 25 and tab 27 is U-shaped and comprises fold line 28 on either side, and a central U-shaped cut.

[0029] In an alternative embodiment shown in Figure 12, each tab 25 and each tab 27 are L-shaped; and the dividing line between each tab 25 and tab 27 is "step-shaped" and comprises fold line 28 and an L-shaped cut. A characteristic feature of the Figure 12 embodiment is that fold line 26 forms an acute angle with longitudinal edges 14 and is perpendicular to fold line 28, which also forms an acute angle with longitudinal edges 14. The fact that fold lines 26 and 28 slope with respect to edges 14 and 15 means tabs 27 can be moved towards the centre of container 2, and, if tabs 27 are large enough, the central ends of tabs 27 can be made to touch, thus increasing the area of the bottom support defined by tabs 27, and so providing a larger supporting area for the bottom of inner package 3.

[0030] In an alternative embodiment shown in Figure 13, to increase contact between each tab 27 and front and rear walls 11 and 12, each tab 27 comprises two further tabs 29 located at opposite ends of tab 27 and hinged to tab 27 along two fold lines 30 parallel to fold line 28. When folding blank 19, each tab 29 is folded squarely with respect to tab 27 onto (and possibly glued to) relative front or rear wall 11, 12. Alternatively, each tab 27 may have one tab 29 as opposed to two.

[0031] The gap 31 (Figure 5) not occupied by inner package 3 inside container 2 (i.e. the gap between the bottom wall of inner package 3 and bottom wall 10) may be used at least partly for housing an accessory (e.g. a lighter) or as a holder or ashtray. Accordingly, an opening, possibly closed by a hinged hatch, is formed in front wall 11 or rear wall 12 of container 2 for access to gap 31.

[0032] Packet 1 of cigarettes as described has numerous advantages.

[0033] Firstly, it provides for housing, and adequately supporting the bottom of, an inner package 3 shorter in height than the container, by virtue of tabs 27 parallel to bottom wall 10 and for supporting the bottom of inner package 3.

[0034] Secondly, container 2 is formed from a blank 19 of standard shape and size, that can be folded on a conventional packing machine with very few alterations (to fold tabs 25 and 27). It is important to note that tabs 25 and 27 can be folded by simply equipping a conventional packing machine with two corresponding, compact, low-cost folding devices.

[0035] Finally, the blank 19 for producing container 2 can be formed directly from a standard blank by simply

cutting out tabs 25 and 27, is therefore extremely cheap to produce and, above all, employs exactly the same amount of material as a standard blank, with no added material required.

Claims

1. A rigid packet of cigarettes, comprising:

a rigid, parallelepiped-shaped container (2) having a front wall (11); a rear wall (12); a top wall (9); a bottom wall (10); and two lateral walls (13), each formed by an inner lateral panel (13") and an outer lateral panel (13') superimposed and glued to each other;

an inner package (3) which encloses a group (4) of cigarettes, is housed inside the container (2), and has a longitudinal dimension smaller than the longitudinal dimension of the container (2); a supporting system (24) which is integral with the container (2), forms a bottom support for the inner package (3), and comprises at least one first tab (25) hinged along a first fold line (26) to an inner lateral panel (13") of a lateral wall (13), and folded, with respect to the inner lateral panel (13"), inwards of the container (2), and a second tab (27) which is hinged along a second fold line (28) to the first tab (25) and is folded squarely with respect to the first tab (25);

the packet (1) of cigarettes being **characterized in that** the second tab (27) is parallel to and a given distance from the bottom wall (10), forms the bottom support for the inner package (3), and is located over the first tab (25), so that the first tab (25) is located on the opposite side of the second tab (27) to the inner package (3).

2. A packet of cigarettes as claimed in Claim 1, wherein the second tab (27) is positioned contacting the front wall (11) and/or the rear wall (12).

3. A packet of cigarettes as claimed in Claim 1, wherein the second tab (27) has a transverse dimension equal to the smaller transverse dimension of the container (2), and is therefore positioned contacting both the front wall (11) and the rear wall (12).

4. A packet of cigarettes as claimed in Claim 1, 2 or 3, wherein the first fold line (26) is located a given distance from both the longitudinal edges (14) defining the lateral wall (13).

5. A packet of cigarettes as claimed in Claim 4, wherein a dividing line between the first tab (25) and the second tab (27) is "step-shaped", and comprises the second fold line (28) and an L-shaped cut.

6. A packet of cigarettes as claimed in any one of Claims 1 to 5, wherein the first tab (25) and the second tab (27) are formed in the inner lateral panel (13") by cutting the inner lateral panel (13"). 5
7. A packet of cigarettes as claimed in any one of Claims 1 to 6, wherein the second tab (27) has a bevelled/rounded corner at a longitudinal edge (14) defining the lateral wall (13). 10
8. A packet of cigarettes as claimed in any one of Claims 1 to 7, wherein the supporting system (24) comprises at least one third tab (29) which is hinged to the second tab (27) along a third fold line (30) parallel to the second fold line (28), is folded squarely with respect to the second tab (27), and rests on the front wall (11) or the rear wall (12). 15
9. A packet of cigarettes as claimed in Claim 8, wherein the third tab (29) is glued to the front wall (11) or the rear wall (12). 20
10. A packet of cigarettes as claimed in Claim 8 or 9, wherein the supporting system (24) comprises two third tabs located at opposite ends of the second tab (27) and resting on the front wall (11) and the rear wall (12) respectively. 25
11. A packet of cigarettes as claimed in any one of Claims 1 to 10, wherein the first fold line (26) is perpendicular to the second fold line (28). 30
12. A packet of cigarettes as claimed in any one of Claims 1 to 11, wherein the rigid container (2) comprises: 35
- four longitudinal edges (14) defined between the front and rear walls and the lateral walls (13);
four major transverse edges (15) defined between the front and rear walls (11, 12) and the top and bottom walls (9, 10); and 40
- four minor transverse edges (15) defined between the lateral walls (13) and the top and bottom walls (9, 10);
the first fold line (26) is parallel to the longitudinal edges (14), and the second fold line (28) is parallel to the minor transverse edges (15). 45
13. A packet of cigarettes as claimed in one of Claims 1 to 11, wherein the rigid container (2) comprises: 50
- four longitudinal edges (14) defined between the front and rear walls and the lateral walls (13);
four major transverse edges (15) defined between the front and rear walls (11, 12) and the top and bottom walls (9, 10); and 55
- four minor transverse edges (15) defined between the lateral walls (13) and the top and bottom walls (9, 10);
the first fold line (26) forms an acute angle with the longitudinal edges (14), and is perpendicular to the second fold line (28), which forms an acute angle with the major transverse edges (15).
14. A packet of cigarettes as claimed in any one of Claims 1 to 13, wherein the first tab (25) is in the form of an "L", a right-angle triangle, or a right-angle trapezium.
15. A packet of cigarettes as claimed in any one of Claims 1 to 14, wherein the supporting system (24) comprises two first tabs (25) and two corresponding second tabs (27), which are located on the two lateral walls (13) respectively.

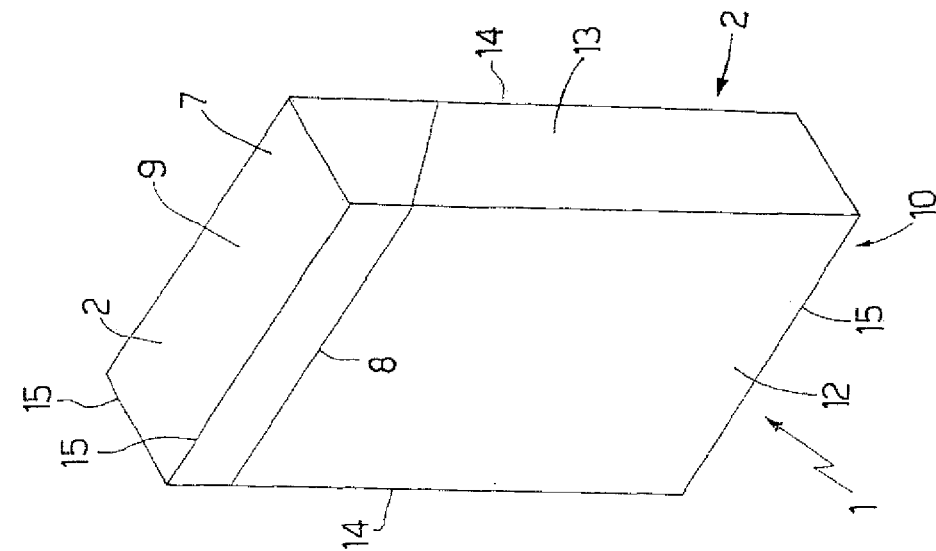


FIG. 1

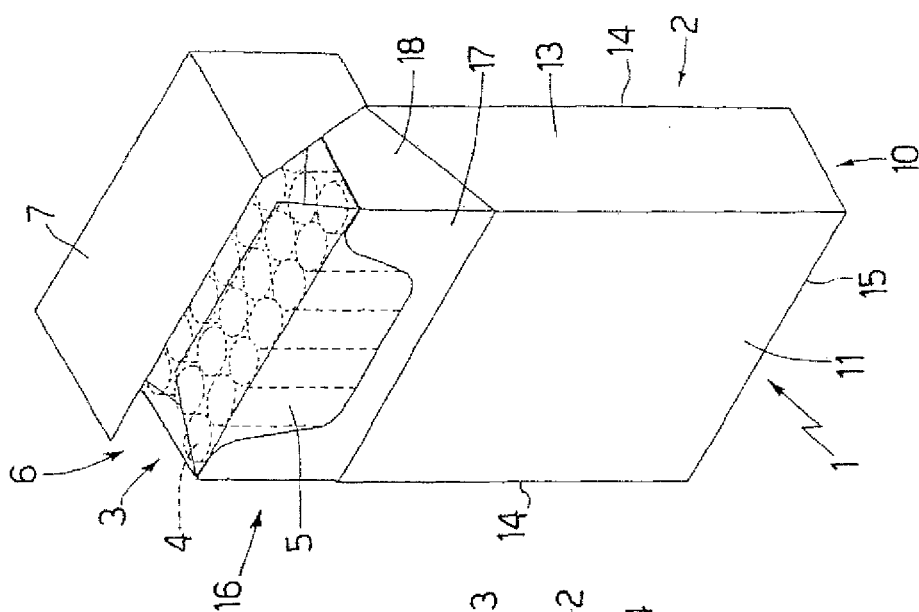


FIG. 2

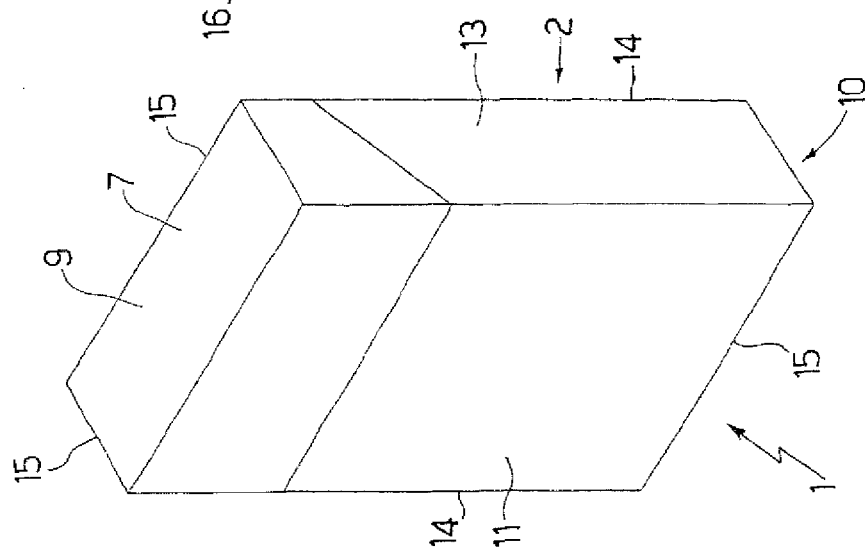
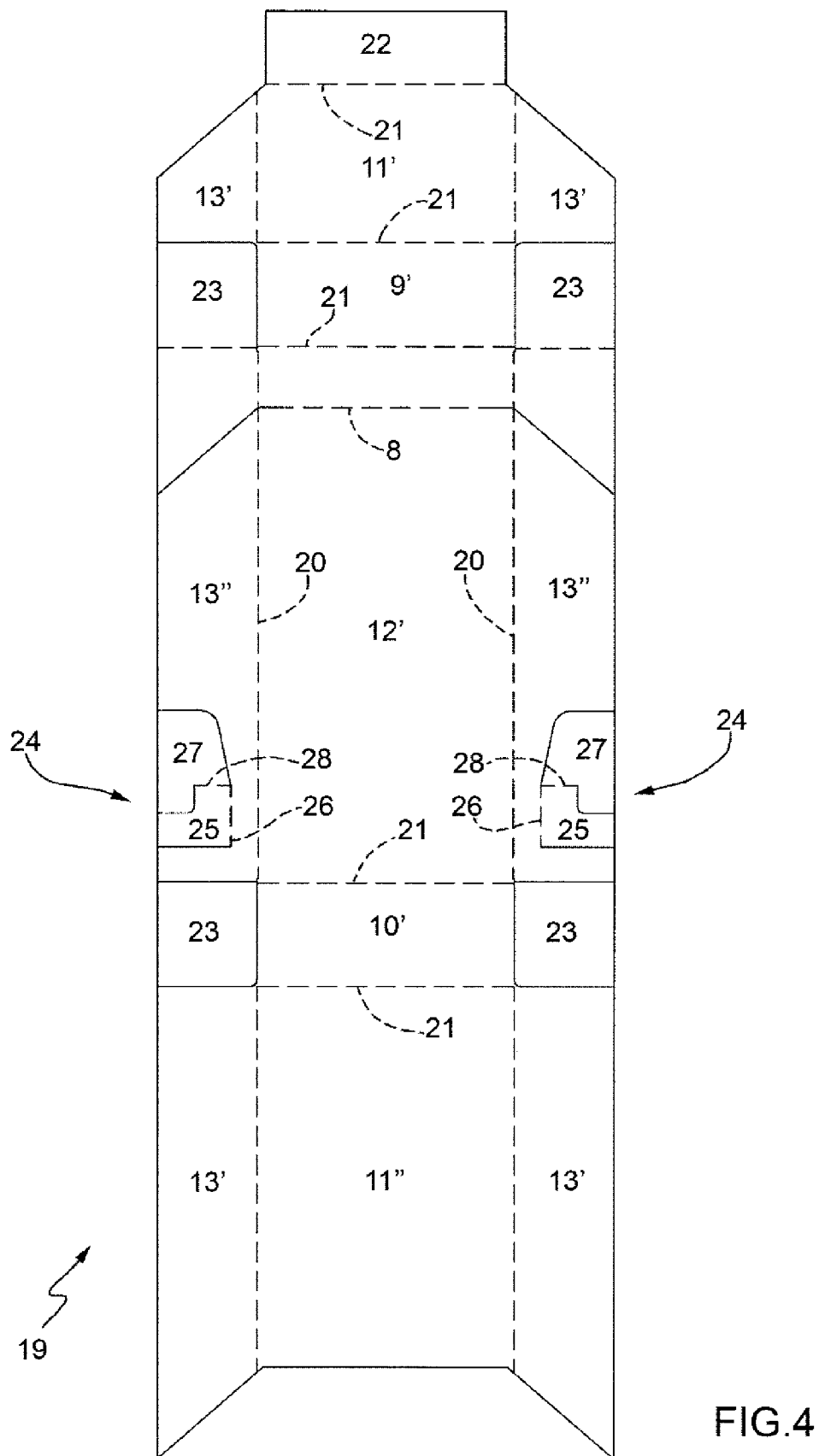
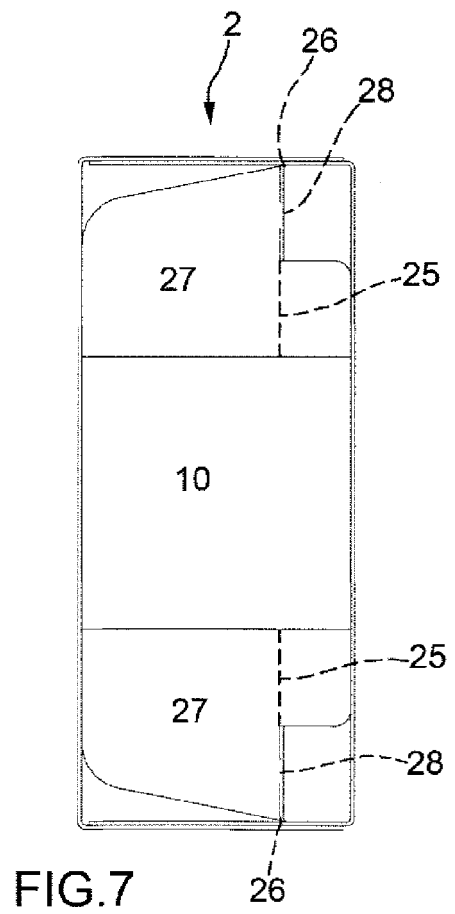
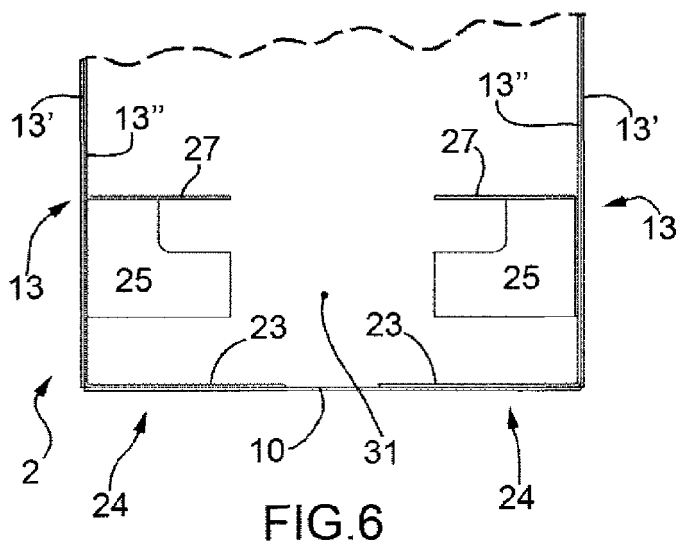
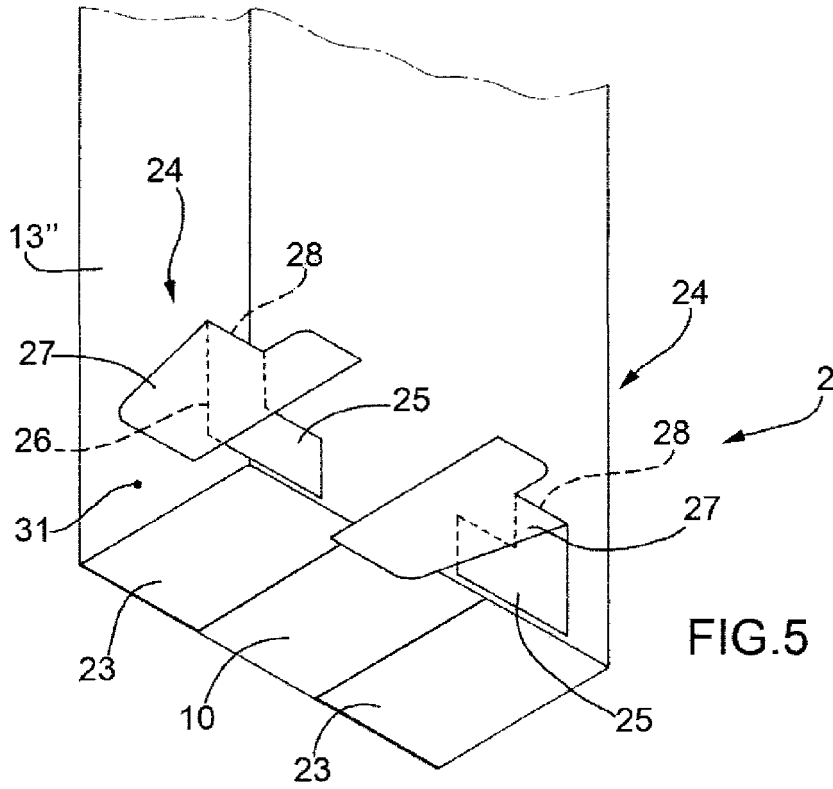


FIG. 3





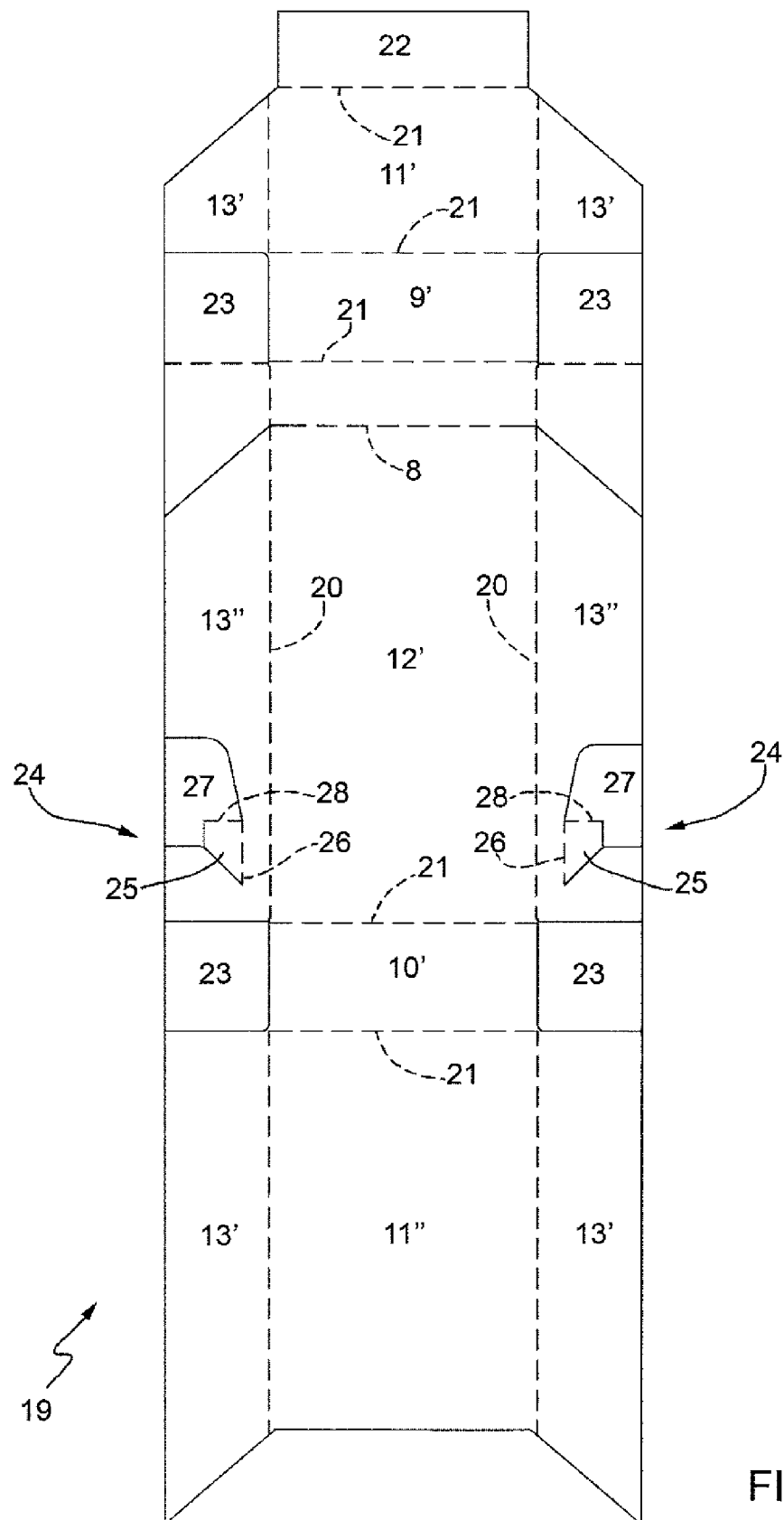
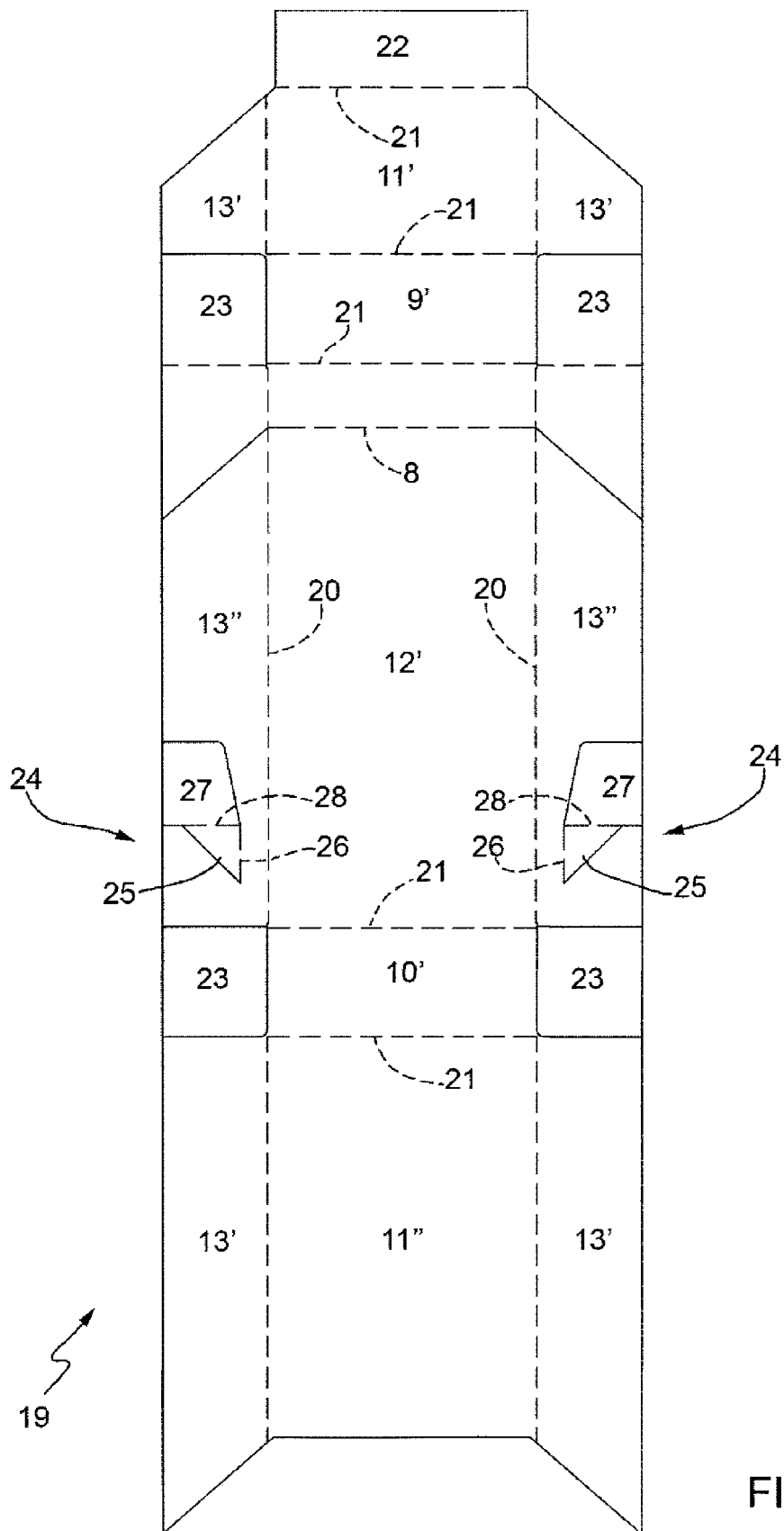
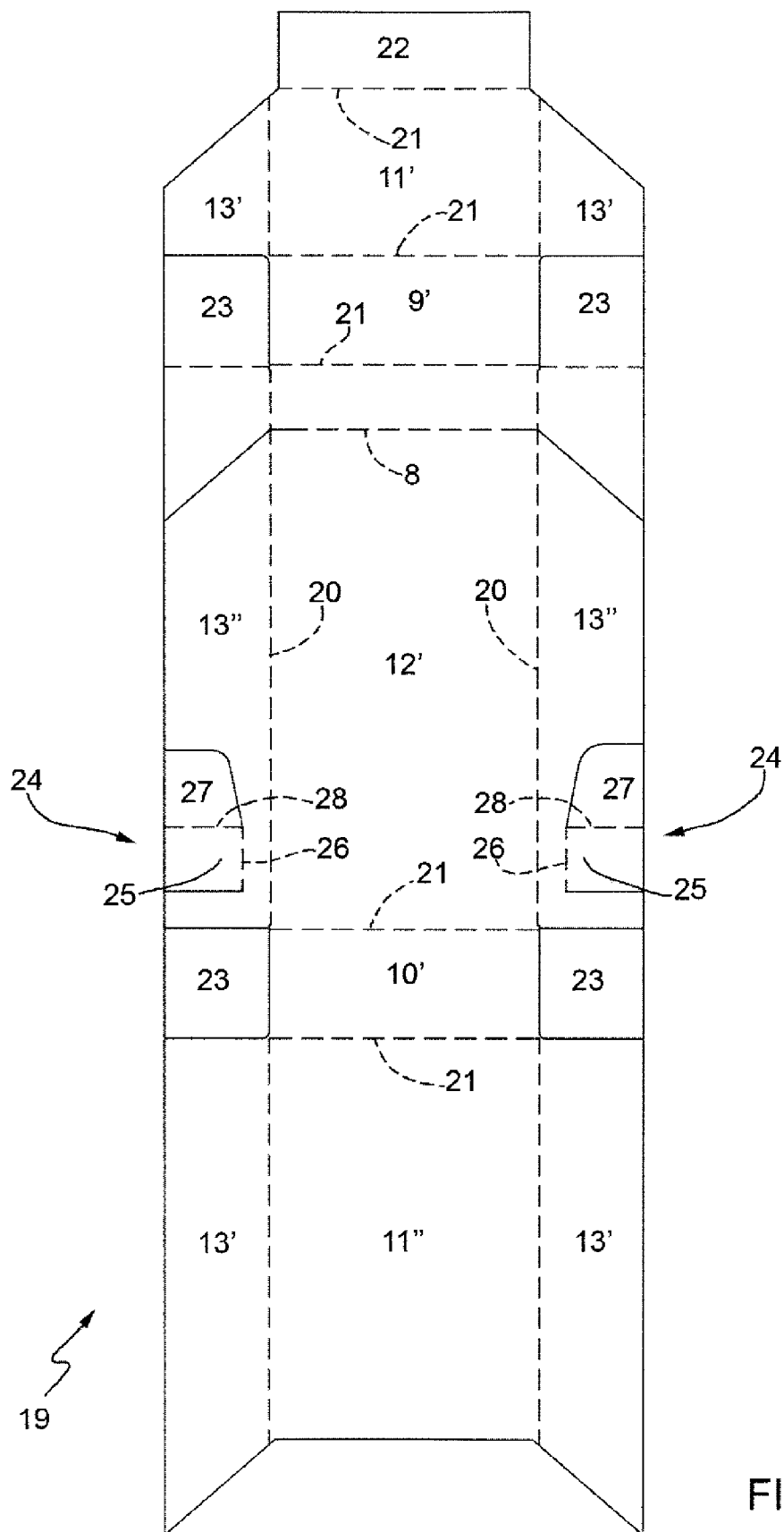


FIG.8





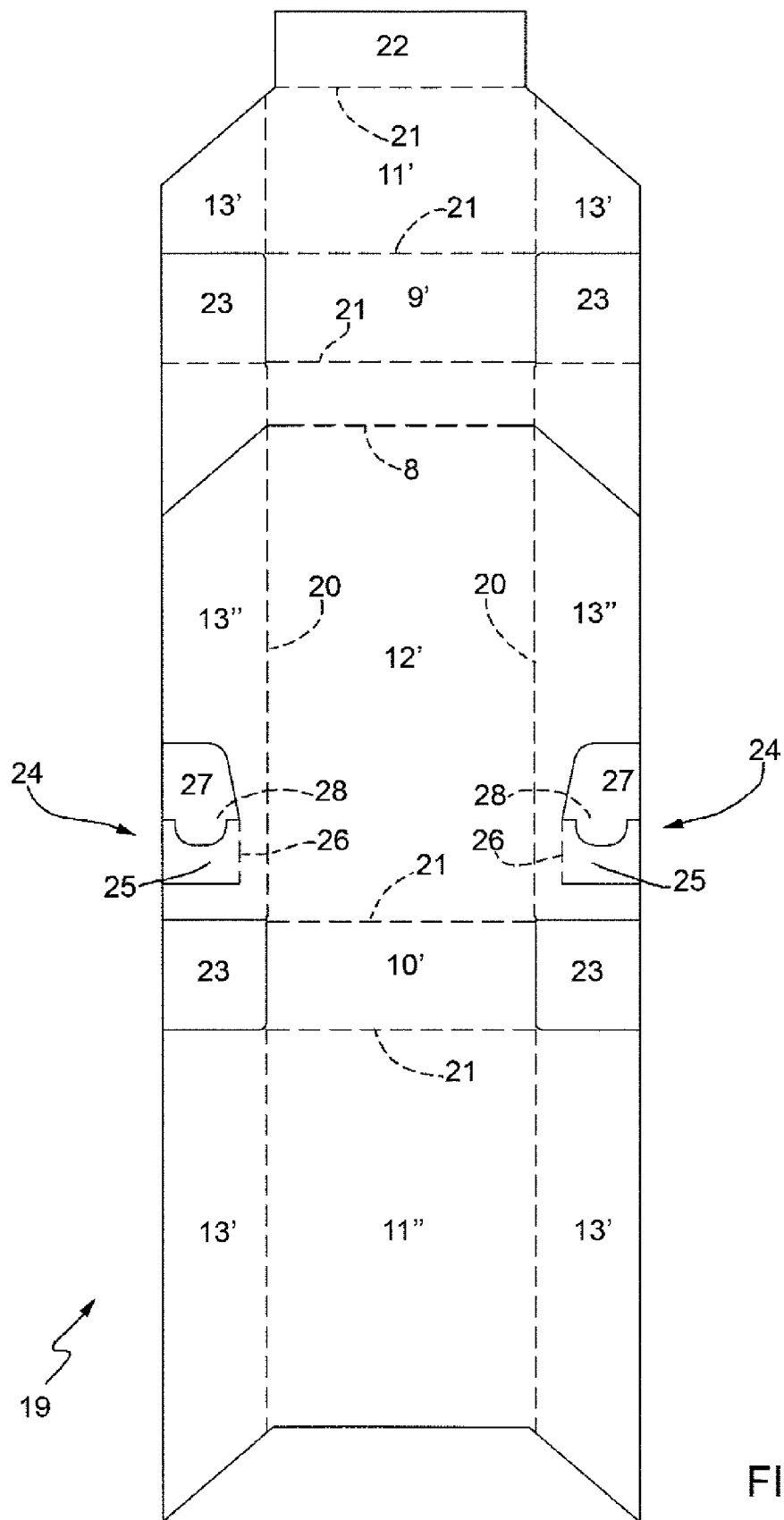
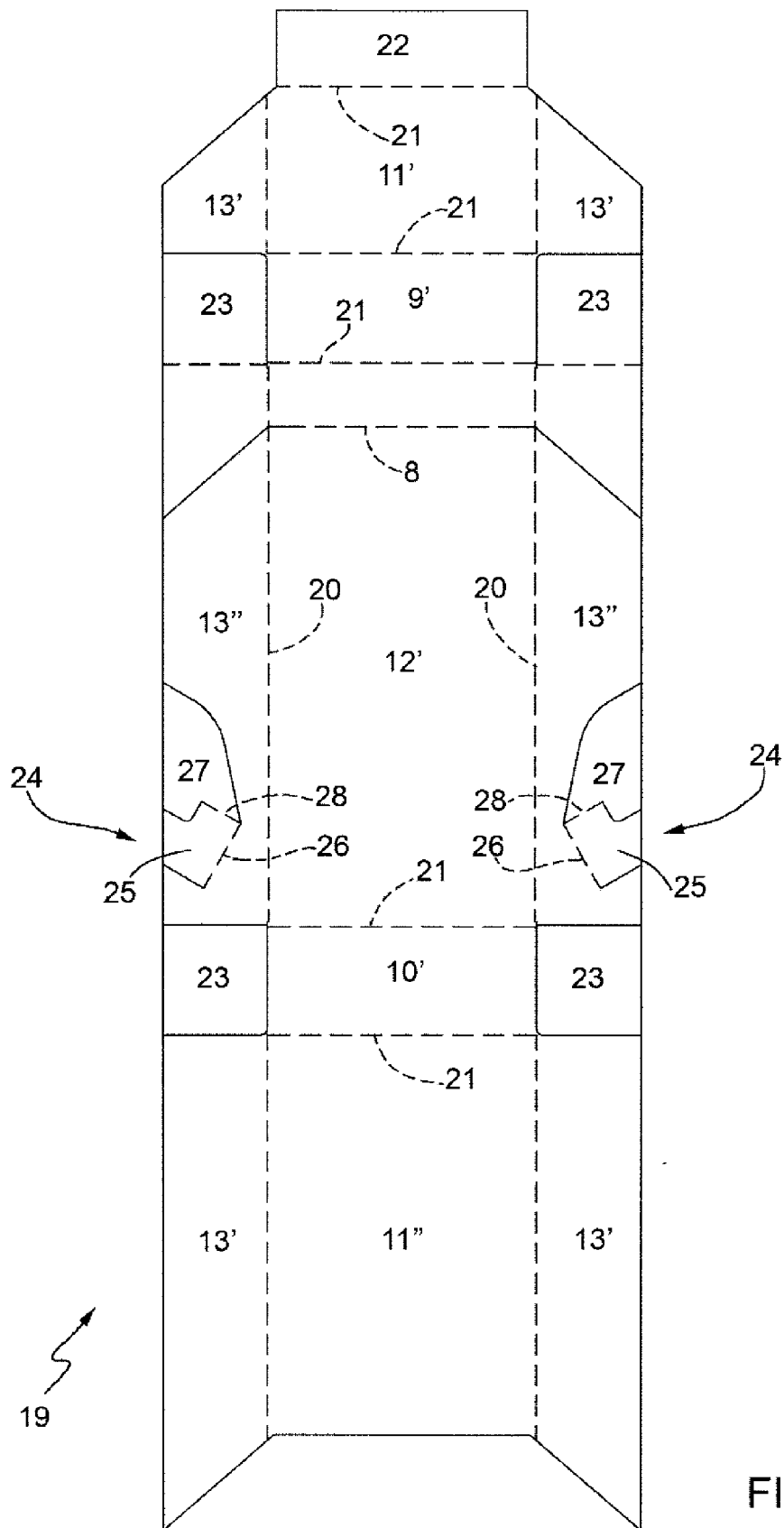
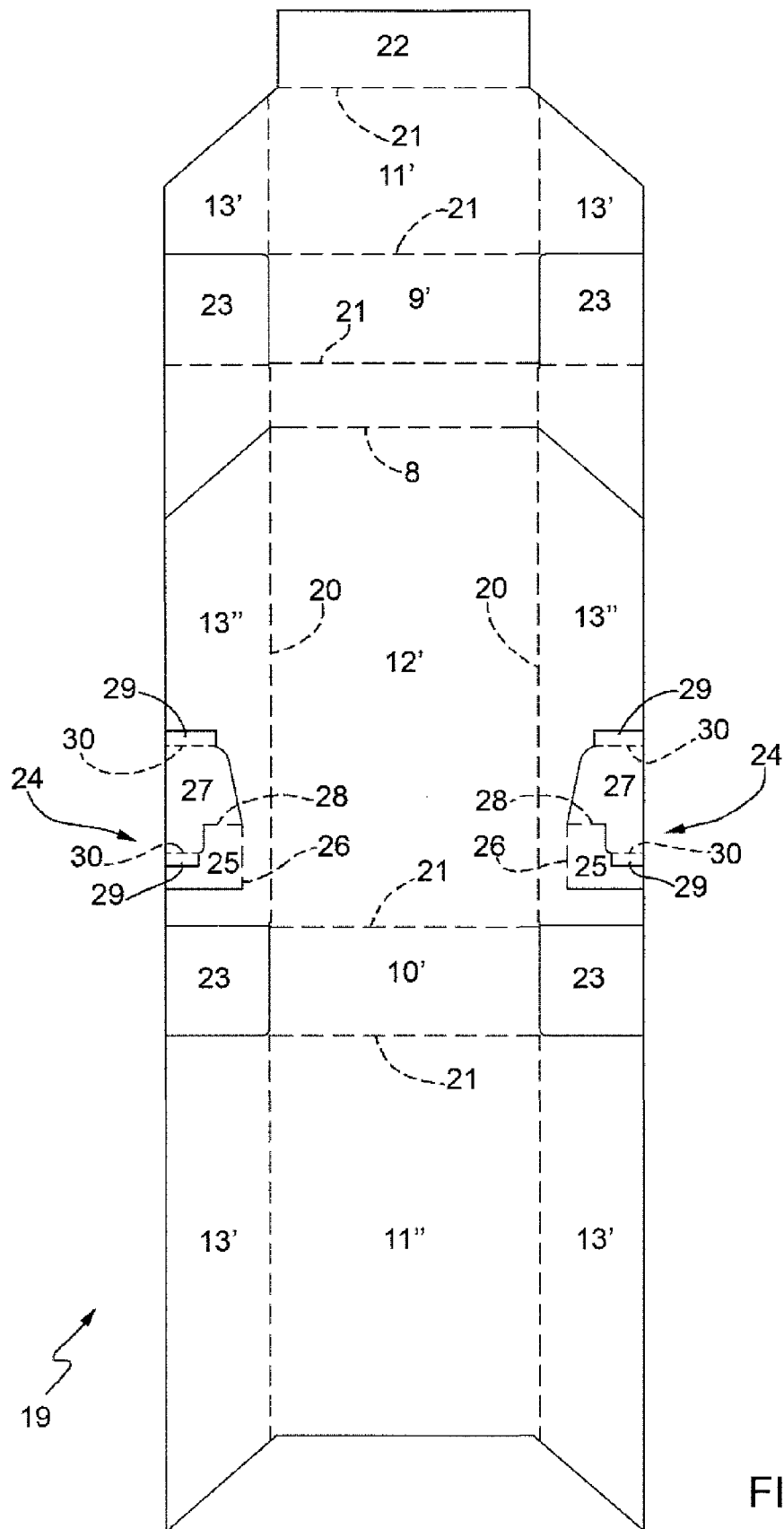


FIG. 11







EUROPEAN SEARCH REPORT

Application Number
EP 10 16 2696

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Place of search Munich		Date of completion of the search 30 July 2010	Examiner Bevilacqua, Vincenzo
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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 10 16 2696

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30-07-2010

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