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(54) **Container and container blank**

(57) The present invention relates to containers 2 comprising a series of panels and a line of weakness 16 along which a part 6 of the container 2 can be separated from another part 4 of the container 2. The line of weak-

ness 16 is arranged in a fashion such that it crosses a straight line connecting two points on the line of weakness 16 at least once. The two points connected by the straight line are located on the same panel of the container 2.

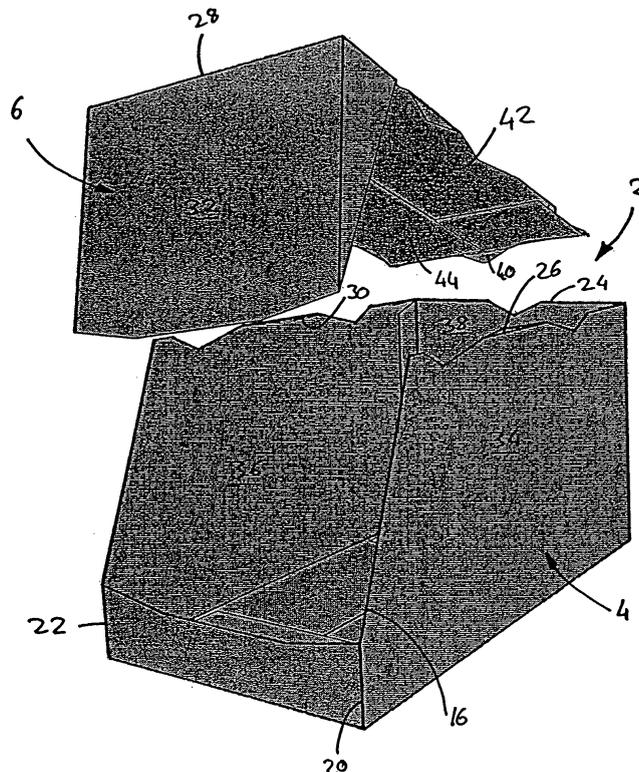


Fig. 2

## Description

**[0001]** The present invention relates to containers and in particular to containers that are configured to be easily transformed from a transport/transit configuration to a display configuration. Such containers are sometimes referred to as transit and display containers and may take the form of a closed box or an open topped tray, for example.

**[0002]** Some trays and transit and display containers have a base part and a top part separable from the base along lines of perforation. Such containers can accordingly be easily transformed, for example by shop personnel, from a transit state into a display state without the need for special tools or equipment.

**[0003]** Some previously known such containers, however, suffer from the disadvantage that the lines of perforation used to enable easy detachment of the top from the base also significantly reduce the strength of the container walls when the container is in its transit state. The container walls may therefore bend relatively easily along the lines of perforation when force is applied to the container, for example when containers are stacked one on top of the other during transport or storage. Such bending may adversely affect the quality of the products in the container and/or the visual appearance of the container in its display configuration. Bending of the container walls along the lines of perforation is accordingly undesirable and should be avoided.

**[0004]** Containers made of sheet material are usually erected from a blank. During erection of the blank, bending forces are applied to the blank/container walls. There is a risk that the walls of the container do not or not exclusively bend along the intended fold lines and that they may instead or in addition bend along the aforementioned lines of perforation. This may lead to damage or deformation of the container rendering it unusable for its transport/transit purpose or for stacking.

**[0005]** It is an object of the present invention to overcome or mitigate some or all of the above disadvantages of conventional transit and display containers.

**[0006]** From a first aspect of the present invention there is provided a container blank for erection into a container and comprising a series of panels hingedly interconnected along respective hinge lines; and a line of weakness allowing a part of the container erected from the blank to be separated from another part of the container; wherein a section of the line of weakness is arranged in a said panel and within that panel crosses a straight line connecting two points arranged on the line of weakness in the said panel at least once.

**[0007]** According to a further aspect of the present invention there is provided a container formed of a series of panels connected to each other, and comprising a line of weakness allowing a part of the container to be separated from another part of the container; wherein a section of the line of weakness is arranged in a said panel and within that panel crosses a straight line connecting

two points arranged on the line of weakness in the said panel at least once.

**[0008]** Thus in accordance with the invention, the line of weakness is not formed as a straight line. Accordingly, bending forces cannot act along a straight line of weakness as was the case in previously known containers, but rather act along a non-linear line of weakness that advantageously improves the bending/crushing strength of the container. The container of the present invention can accordingly be subjected to larger vertical or horizontal loads than conventional containers without bending of the container walls in their transit state.

**[0009]** Preferably the line of weakness crosses the straight line at least twice, three times, four times, five times or more.

**[0010]** In one embodiment, the straight line has its end points at opposing edges of a panel, and the line of weakness intersects the edges at these points. The straight line of the preferred embodiment may accordingly follow a path along which a straight line of weakness might have been applied on previously known containers. The line of weakness of the present invention, however, intersects or crosses this straight line at least once and therefore comprises at least one section that is located above and at least one section located below the straight line.

**[0011]** The present invention is however, not intended to be limited to this embodiment, but instead extends to arrangements in which the two end points of the straight line can be located anywhere on the line of weakness as long as both of these points are located in the same panel.

**[0012]** The straight line may extend across the blank or container panel in any direction and may have any length that is suitable to be contained within a single blank panel or container panel. Preferably, however, the straight line extends in a direction which in the erected container will be generally horizontal.

**[0013]** In a preferred embodiment the straight line may extend along at least a section of a hinge line on said panel, such as, for example a hinge line that hingedly connects a flap to a main part of the panel. In this embodiment therefore a part of the line of weakness is located on the flap and another part is located on the main part of the panel.

**[0014]** During erection of the container the flap is bent about the hinge line such that it forms at least a part of a different wall of the container, for example a part of the container top or lid. In this case, the panel hinge line forms an edge of the container after assembly of the container and following erection of the container from the blank at least a part of the line of weakness is located in one wall of the erected container and another part of the line of weakness is located in another, adjacent wall of the container.

**[0015]** Advantageously, therefore, lines of weakness can be positioned on a container such as to approximately follow an edge of the container without the container bending along the line of weakness during erection as can be the case in previously known containers.

**[0016]** This arrangement is believed to be advantageous in its own right and thus from another aspect there is provided a container comprising a line of weakness allowing one part of the container to be separated from another part of the container, wherein a section of said line of weakness crosses an edge of said container between adjacent walls of the container more than once.

**[0017]** From a yet further aspect, the invention provides a container blank for erection into a container and comprising a series of panels hingedly connected along respective hinge lines; and a line of weakness allowing a part of the container erected from the blank to be separated from another part of the container; wherein a section of the line of weakness is arranged to cross a said hinge line between adjacent panels more than once over the length of the hinge line.

**[0018]** The line of weakness in the invention may have a smooth, continuous shape or a discontinuous shape, for example a series of straight line sections meeting at an angle. In certain embodiments of the invention, the line of weakness may comprise a section or sections having a non-repetitive pattern. In other embodiments, the line of weakness may comprise a section or sections having a pattern that is repeated one or more times.

**[0019]** Such a repeating pattern preferably is a repeating curved pattern and in a particularly preferred embodiment is a substantially sinusoidal pattern. It has been shown that use of a substantially sinusoidal pattern permits limiting the reduction in bending or crushing strength of the container material to 5% when compared to the bending or crushing strength of the equivalent unperforated container material.

**[0020]** As stated above, however, the present invention is not intended to be limited to lines of weakness having smooth or curved sections, and the line of weakness may have, for example, a zigzag shape.

**[0021]** The line of weakness preferably comprises at least one peak and/or at least one trough and preferably a series of peaks and troughs. The spacing between adjacent peaks or between adjacent troughs is preferably between 10 mm and 200 mm, for small or medium size transit and display container, more preferably between 16 mm and 200 mm, between 16 mm and 150 mm or between 60 mm and 150 mm and most preferably between 80 mm and 120 mm. Thus a peak is preferably spaced from an adjacent trough by 5 mm to 100 mm, more preferably by 8 mm to 100 mm, by 8 mm to 75 mm or by 30 mm to 75 mm and even more preferably by 40 mm to 60 mm and most preferably by 40 mm to 60 mm. Open top containers (containers not comprising a lid or hood formed integrally with the container) preferably provide a spacing between adjacent peaks or between adjacent troughs between 10 mm and 80 mm and more preferably between 10 mm and 60 mm. Thus in an open top container a peak is preferably spaced from an adjacent trough by 5 mm to 40 mm and more preferably by 5 mm to 30 mm. A small container may, for example, have a footprint of 200 mm by 400 mm but may of course

be shorter or be less wide or both and may have a footprint of as small as 100 mm by 300 mm. A medium size container may for example have a footprint of about 380 mm by 600 mm but may of course be shorter or be less wide or both. The peak to peak amplitude of a preferred peak or trough pattern is between 4 mm and 90 mm and more preferably between 20 mm and 90 mm for small or medium sized containers. In a more preferred embodiment the peak to peak amplitude of a peak and trough pattern for a standard size container is between 20 mm and 75 mm. In larger containers, for example in pallet sized containers the peak to peak amplitude of a peak and trough pattern is preferably up to 400 mm. In open top containers, the peak to trough amplitude is preferably between 4 mm and 20 mm.

**[0022]** The ratio of the amplitude of these peaks or troughs to the spacing between individual adjacent peaks or between individual adjacent troughs in small or medium size containers is preferably between 0.10 and 1.5 and more preferably between 0.2 and 0.8. In large or pallet size containers this ratio may be as large as 2.7. (Expressed in other words, the ratio of the peak to trough amplitude to the spacing between a peak and an adjacent trough in small or medium size containers is preferably between 0.20 and 3.0 and more preferably between 0.4 and 1.6. In large or pallet size containers this ratio may be as large as 5.4.)

**[0023]** Referring to embodiments where a line of weakness extends along an edge of the container, a peak to trough amplitude of a wave-like or zig-zag pattern is preferably in the range of 10 mm to 100 mm, more preferably in the range of 10 mm to 50 mm. It has been found that lines of weakness having a wave-like or zigzag pattern with peak to peak amplitudes in the range of 10 to 25 mm, perform extremely satisfactorily in that the risk of tearing of the line of weakness when folding the blank along the edge during erecting of the container is substantially reduced. The spacing between a peak of the wave-like or zig-zag pattern is preferably up to 120 mm and more preferably between 40 mm and 100 mm. It has been found that for such lines of weakness comprising more than one peak or more than one trough, extremely satisfactory performance can be achieved when a pitch (peak to peak or trough to trough) spacing along the line of weakness of up to 200 mm or more is provided in small to medium sized containers. (Expressed in other words, the spacing between a peak and adjacent trough is up to 100 mm or more).

**[0024]** In a further preferred embodiment the line of weakness can be arranged such as not to cross an area of the container which is intended to receive sealing tape.

**[0025]** The line of weakness may be of any type known in the art, most simply a line of perforations. The present invention encompasses containers made from any suitable foldable sheet material, for example paperboard or cardboard, but also including plastic material.

**[0026]** The another part of the container may be fully separable from the part of the container or may alterna-

tively be only partly separable from the that part.

**[0027]** Various embodiments of the present invention will now be described by way of example only and with reference to the accompanying drawings, in which:

Figure 1 shows the inside surface of a blank of a container according to one preferred embodiment; Figure 2 shows a preferred container erected from the blank shown in Figure 1;

Figure 3 shows a blank of a container according to a further embodiment; and

Figure 4 shows a container according to another preferred embodiment in its transit state;

Figure 5 shows the container of Figure 4 with the two container parts detached from each other;

Figure 6 shows a blank of the container shown in Figures 4 and 5;

Figure 7 shows a blank of a container according to a further embodiment.

Figures 8-1 and 8-2 show previously known containers comprising straight lines of weakness and lines of weakness comprising a curved section respectively;

Figure 8-3 shows a blank according to a preferred embodiment;

Figure 8-4 shows a blank according to another preferred embodiment;

Figure 9-1 shows a blank for a base section of a container according to a further preferred embodiment; and

Figure 9-2 shows a base section erected from the blank shown in Fig. 9-1.

**[0028]** Figure 1 shows a blank of a transit and display container 2. The container blank comprises a first or base part 4 and a second or top part 6 and consists of a row of panels 8, 10, 12 and 14. Top part 6 is separable from base part 4 along a zigzag like line of weakness 16. It is not intended that the base part 4 and top part 6 of the container blank as such be separated from each other but rather that these two parts only be separated when transforming the assembled containers 2 from its transit state to its display state. The container blank is accordingly shown in Figure 1 in this separated manner for illustrative purpose only.

**[0029]** Figure 2 shows a container assembled from the blank shown in Figure 1 with the top part 6 is separated from base part 4 along line of weakness 16.

**[0030]** The row of panels 8, 10, 12 and 14 are hingedly connected to each other along hinge lines 18, 20 and 22. Further hinge lines 24, 26, 28 and 30 extend across each of the panels 8, 10, 12 and 14. Line of weakness 16 substantially extends along hinge lines 24, 26 and 30 in the upper half of the container blank/container and is further configured to permit removal of a section of side wall 32 of the container. The sections of line of weakness 16 that extend along top edges 24, 26 and 30 of the container blank/container is an irregular zigzag shape. Line of

weakness 16 intersects or crosses hinge lines 24, 26 and 30 repeatedly in each of panels 8, 10 or 14. Hinge lines 18, 20, 22, 24, 26, 28 and 30 form edges of the erected container as is shown in Figure 2.

**[0031]** Line of weakness 16 of the preferred embodiment is arranged such that its peaks are on the top flaps of the container blank/container that are associated with panels 8, 10 and 14 and the troughs of line of weakness 16 lie on the main parts of panels 8, 10, 14 or on side walls 34 and 36 and on back wall 38 of the erected container respectively. The preferred embodiment accordingly facilitates removal of the top of the container substantially along edges 24, 26 and 30.

**[0032]** Line of weakness 16 further defines a tab 40. Conventional pressure sensitive sealing tape may be used to seal the top flaps 42 and 44 of the container along the edges of these top flaps 42 and 44 that are adjacent to each other in a closed state. The line of weakness 16 of the preferred embodiment is configured such that tab 40 remains attached to the top part 6 of the container when this top part 6 is separated from base part 4. Excess sealing tape that may extend onto tab 40 on back wall 38 of a container can thus be removed together with top part 6. A situation in which sealing tape overlays lines of weakness 16 potentially hindering separation of top part 6 from base part 4 along line of weakness 16 is therefore avoided.

**[0033]** The peak to peak amplitude of line of weakness 16 in the sections extending along top edges 24, 26 and 30 is about 21 mm. The two peaks situated above hinge line 24 on panel 8 are each spaced about 48 mm from the trough between them. The horizontal peak to peak spacing is accordingly about 96 mm. The middle peak arranged above line 26 on panel 10 is spaced about 49 mm from each of the adjacent troughs, the peak on the left of panel 10 is spaced about 38 mm from the trough further to the right.

**[0034]** Figure 3 shows a blank 50 of a container according to a further preferred embodiment. The blank of this preferred embodiment comprises a line of weakness 52 that has a substantially sinusoidal shape and extends substantially along edges 54, 56, 58 and 60 at the top of the blank. The peak to peak amplitude of this sinusoidal line of weakness is about 11 mm. The horizontal peak to peak spacing along this line of weakness is about 200 mm. The top of a container formed from blank 50 can accordingly be separated from the base of that container substantially along edges 54, 56, 58 and 60.

**[0035]** Figures 4 and 5 show a further embodiment of a transit and display tray 70 in its transit and display states respectively. This tray 70 is not closed at the top but merely comprises flanges 72 and 74 that permit stacking of several trays on top of each other in a stable fashion. The two parts 76 and 78 of the container can be separated from each other along line of weakness 80.

**[0036]** Shown for illustrative purpose only is an imaginary straight line 82 (dashed) connecting points 84 and 86 on line of weakness 80. Line of weakness 80 crosses

or intersects straight line 82 in points 88 and 90. Other straight lines connecting two points on line of weakness 80 that are intersected at least once can be imagined on each of the three panels of tray 70 that contain parts of line of weakness 80.

**[0037]** Figure 6 shows a blank of the container of Figures 4 and 5 comprising a series of panels 92, 94, 96, 98 and 100. As can be seen, line of weakness 80 does not continuously extend between panels 94 and 98 of the blank. A continuous line of weakness 80 is in this embodiment created when container 70 is erected from the blank by overlapping the sections of line of weakness 80 on panels 94 and 96 with the respective sections of line of weakness 80 on panel 96.

**[0038]** Figure 7 shows a further embodiment of a blank 110 of a transit and display container comprising a series of panels 112, 114 and 116. The container of this embodiment does not comprise any panels or flaps for closing the top of a container that is to be assembled from blank 110 in an assembled or erected state.

**[0039]** Parts 118 and 120 of panels 112 and 116 are provided such as to ensure that several of the containers that can be assembled from blank 110 can be stacked in a stable and secure fashion. These sections can be separated from panels 112 and 116 respectively along wave-like lines of weakness 122 and 124, such as to convert the container from its transit or transport configuration to its display configuration.

**[0040]** Shown for illustrative purpose only is imaginary straight line 126 (dashed) connecting points 128 and 130 of line of weakness 124. Straight line 126 is intersected by line of weakness 124 in points 132, 134, 136 and 138.

**[0041]** Figures 8-1 and 8-2 show blanks 150 and 160 of previously known transit and display containers, respectively comprising straight 152 and partially curved 162, 164 lines of perforation to allow separation of parts 156, 158, 166 or 168 from containers erected from blanks 150 and 160. It has been shown that the resistance of containers erected from blanks 150 and 160 to crushing forces applied to the containers in a vertical direction is reduced by 19% when compared to an unperforated container having the same geometry and size.

**[0042]** Figures 8-3 and 8-4 show blanks 170 and 180 of preferred embodiments of the present invention having the same geometry and size as blanks 150 and 160 but with lines of perforation 172, 174, 182 and 184 comprising a triangular or zig-zag pattern. The reduction in resistance to a vertical crushing force of a container erected from blank 170 is 16% when compared to an unperforated container having the same geometry and size. The reduction in resistance to a vertical crushing force of a container erected from blank 180 is only 5% when compared to the resistance to a vertical crushing force of an unperforated container having the same geometry and size. A container erected from a blank 110 shown in Figure 7 has a reduction of resistance to vertical crushing forces of 12% when compared to an unperforated container of equal geometry and size. The containers of

these preferred embodiments therefore exhibit a marked improvement over previously known containers such as containers that may be erected from blanks 150 and 160 shown in Figures 8-1 and 8-2, in that these containers of the preferred embodiments can withstand larger amounts of vertical crushing force than comparable previously known transit and display containers.

**[0043]** Fig. 9-1 shows a blank 200 for a further preferred container. The blank comprises a series of panels 202, 204 and 206 hingedly connected along hinge lines 208 and 210. Panels 212, 214 and 216 form the side walls and the bottom wall of the container in its erected state. Lines of weakness 218 and 220 having a wave-like pattern define removable sections 222 and 224 on panels 212 and 216 respectively. The peak to peak amplitude of these wave-like lines of weakness is about 5 mm. The period or peak to peak spacing of the wave-like pattern is about 18 mm. The ratio of the amplitude of these peaks to the spacing between individual adjacent peaks is accordingly about 0.31. Removable finger holes 226 and 228 are further provided on the boundary between removable sections 222 and 224 and the remainders of panels 212 and 216 respectively.

**[0044]** Fig. 9-2 show a container 250 erected from blank 200 shown in Fig. 9-1. As can be seen from Fig. 9-2, the fully erected base is open at the top and partially open to the front. The base 300 can be filled with goods in this configuration. For transport and storage, the container may be covered with a hood or lid with side walls that extend at least partially along the side walls of the container shown in Fig. 9-2, so that the container is fully closed when the hood or lid is in place. A hood for covering container 250 can be adhered to removable sections 222 and 224 respectively, so that the hood and removable sections 222 and 224 can be removed together in a single operational step. Preferably, the hood comprises finger openings that coincide with the finger openings 226 and 228 respectively of container 250. In this container, a user can, as a first opening step, press these finger openings to the inside of the container, so as to be able to insert his or her fingers. Subsequently, an outwardly pulling force can be applied to the hood and to removable sections 222 and 224, in order to cause tearing of lines of weakness 218 and 220. Once line of weakness 218 and 220 are completely torn, the hood can simply be removed from the container 250 together with removable sections 222 and 224.

**[0045]** Lines of weakness 218 and 228 define peaks and troughs on the removable sections 222 and 224 and on the remainders of panels 212 and 216 respectively. It will be appreciated that application of a downwardly extending force, for example a load applied during stacking, causes interference between removable sections 222 and 224 and the remainder of panels 212 and 216. In the preferred embodiment load is transferred across lines of weakness 218 and 228 not only through bridging material but also through this interference. Arranging part of lines of weakness 218 and 220 in an upwardly extend-

ing direction thus permits use of weaker lines of weakness as these lines of weakness do not only rely on bridging material to carry the load applied to removable sections 222 and 224.

**[0046]** Although the present invention has been described with reference to preferred embodiments, it will be understood by those skilled in the art that many changes in form and detail may be made without departing from the scope of the invention as set forth in the accompanying claims.

### Claims

1. A container blank for erection into a container comprising a series of panels hingedly interconnected along respective hinge lines; and a line of weakness allowing a part of the container erected from the blank to be separated from another part of the container; wherein a section of the line of weakness is arranged in a said panel and within that panel crosses a straight line connecting two points arranged on the line of weakness in the said panel at least once.
2. A container formed of a series of panels connected to each other, and comprising a line of weakness allowing a part of the container to be separated from another part of the container; wherein a section of the line of weakness is arranged in a said panel and within that panel crosses a straight line connecting two points arranged on the line of weakness in the said panel at least once.
3. A container blank or a container as claimed in claim 1 or 2, wherein said line of weakness crosses said straight line at least two times, at least three times, at least four times, at least five times or more than five times.
4. A container blank or a container as claimed in claim 1, 2 or 3, wherein said straight line has its end points at opposing edges of the said panel, and the line of weakness intersects said edges at these points.
5. A container blank or a container as claimed in any preceding claim, wherein said straight line extends in a direction which in the erected container is generally horizontal.
6. A container blank or a container as claimed in any preceding claim, wherein said straight line extends along at least a section of a further hinge line provided on one of said panels, the further hinge line hingedly connecting a flap forming part of said one of said panels to a main part of said one of said panels.
7. A container comprising a line of weakness allowing one part of the container to be separated from another part of the container, wherein a section of said line of weakness crosses an edge of said container between adjacent walls of the container more than once.
8. A container blank for erection into a container and comprising a series of panels hingedly connected along respective hinge lines; and a line of weakness allowing a part of the container erected from the blank to be separated from another part of the container; wherein a section of the line of weakness is arranged to cross a said hinge line between adjacent panels more than once over the length of the hinge line.
9. A container blank or a container as claimed in any preceding claim, wherein the line of weakness has a discontinuous shape.
10. A container blank or a container as claimed in claim 9, wherein said discontinuous shape is a zigzag shape.
11. A container blank or a container as claimed in any of claims 1 to 8, wherein the line of weakness has a smooth, continuous shape.
12. A container blank or a container as claimed in any preceding claim, wherein the line of weakness comprises a section or sections having a non-repetitive pattern.
13. A container blank or a container as claimed in any preceding claim, wherein the line of weakness comprises a section or sections having a pattern that is repeated one or more times.
14. A container blank or a container as claimed in claim 13, wherein said repeated pattern is a curved pattern.
15. A container blank or a container as claimed in claim 14, wherein said curved pattern is a substantially sinusoidal pattern.
16. A container blank or a container as claimed in any preceding claim, wherein said line of weakness is arranged such as not to cross an area of the container which is intended to receive sealing tape.
17. A container blank or a container as claimed in any preceding claim, wherein said line of weakness is a line of perforation.
18. A container blank or a container as claimed in any preceding claim, made from paperboard, cardboard

- or plastic sheet material.
19. A container blank or a container as claimed in any preceding claim, wherein said another part of said container is fully separable from said part of said container. 5
20. A container blank or a container as claimed in any of claim 1 to 18, wherein said another part of said container is only partly separable from said part of said container. 10
21. A container formed of a series of panels connected to each other, and comprising a line of weakness allowing a part of the container to be separated from another part of the container; wherein said line of weakness is wave like along at least a portion of its length. 15
22. A container formed of a series of panels connected to each other, and comprising a line of weakness allowing a part of the container to be separated from another part of the container; wherein said line of weakness is zigzag in appearance along at least a portion of its length. 20 25
23. A container blank or a container as claimed in any preceding claim, comprising a further line of weakness allowing a further part of the container to be separated from the another part of the container; wherein a section of the further line of weakness is arranged in a further said panel and within that further panel crosses a straight line connecting two points arranged on the line of weakness in the said further panel at least once. 30 35
24. A container blank or a container as claimed in claim 23, wherein said panel and said further panel form side walls of the container. 40
25. A container or a container erected from a blank as claimed in any preceding claim, comprising a base member and a covering member, wherein said line of weakness is provided in the base member. 45
26. A container blank or a container as claimed in any preceding claim, wherein said line of weakness comprises at least one peak and at least one trough and wherein a said peak is spaced from a said trough adjacent to said peak by 8 mm to 100 mm. 50
27. A container blank or a container as claimed in claim 26, wherein said peak is spaced from a said trough adjacent to said peak by 8 mm to 75 mm. 55
28. A container blank or a container as claimed in claim 26 or 27, wherein said peak is spaced from a said trough adjacent to said peak by 40 mm to 60 mm.
29. A container blank or a container as claimed in any preceding claim, wherein said line of weakness comprises at least one peak and at least one trough with a peak to trough amplitude of between 4 mm and 90 mm.
30. A container blank or a container as claimed in claim 29, wherein said peak to trough amplitude is between 20 mm and 90 mm.
31. A container blank or a container as claimed in claim 29 or 30, wherein said peak to trough amplitude is between 20 mm and 75 mm.
32. A container blank or a container as claimed in any of claims 1 to 26, wherein said line of weakness comprises at least one peak and at least one trough with a peak to trough amplitude of up to 400 mm.
33. A container blank or a container as claimed in any preceding claim, wherein said line of weakness comprises at least one peak and one trough, wherein a ratio of a peak to trough amplitude to a spacing between a said peak and a said trough adjacent to said peak is between 0.20 and 3.0.
34. A container blank or a container as claimed in claim 33, wherein said ratio is between 0.4 and 1.6.
35. A container blank or a container as claimed in claim 33 or 34, wherein said ratio is up to 5.4.
36. A container blank or a container as claimed in claims 7 or 8, wherein said section of said line of weakness comprises at least one peak and at least one trough, and wherein an amplitude between a said peak and a said trough is between 10 mm and 100 mm.
37. A container blank or a container as claimed in claim 36, wherein said amplitude is between 10 mm and 25 mm.
38. A container blank or a container as claimed in claims 7 or 8, wherein said section of said line of weakness comprises at least one peak and at least one trough, and wherein a said peak is spaced from a said trough adjacent to said peak by up to 120 mm.
39. A container blank or a container as claimed in claim 38, wherein said peak is spaced from a said trough adjacent to said peak by between 40 and 100 mm.





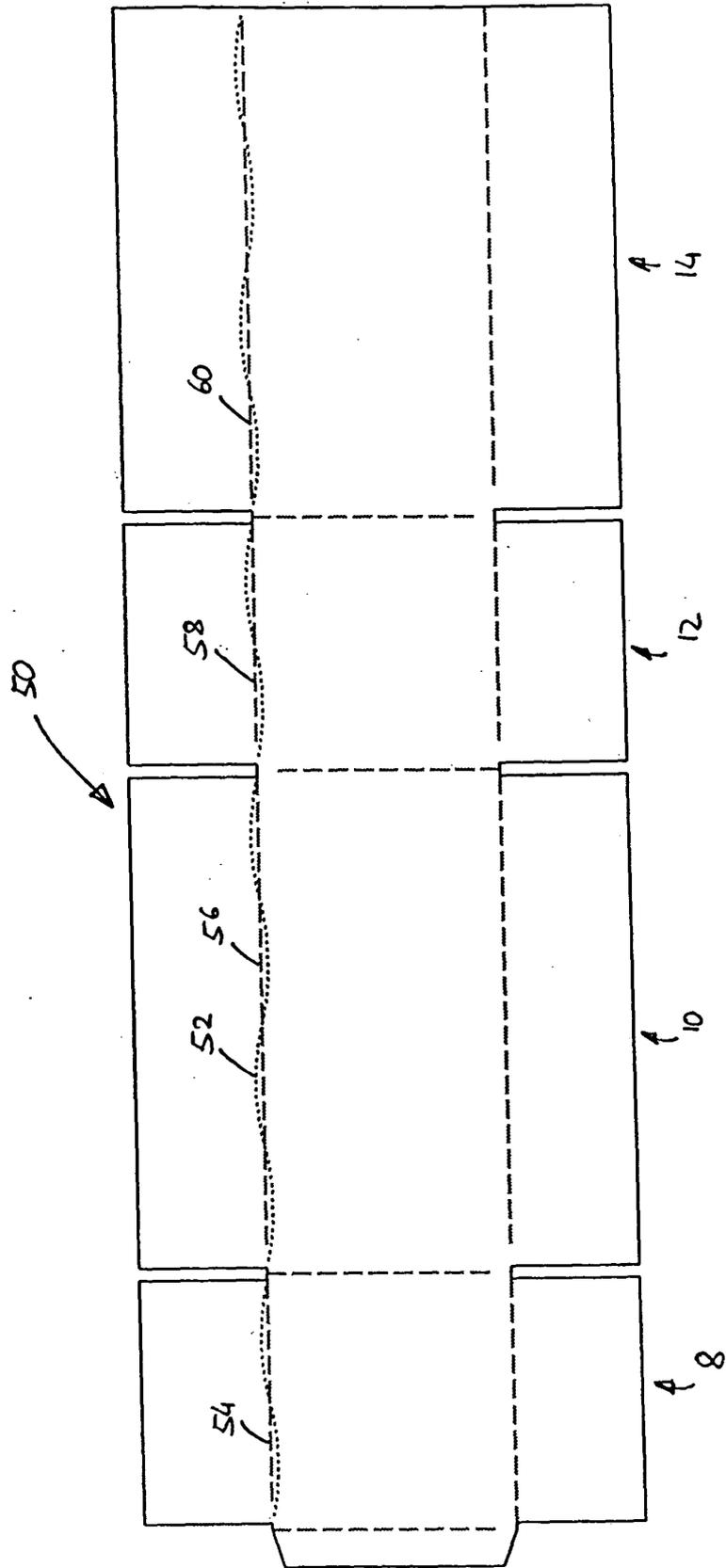


FIG. 3

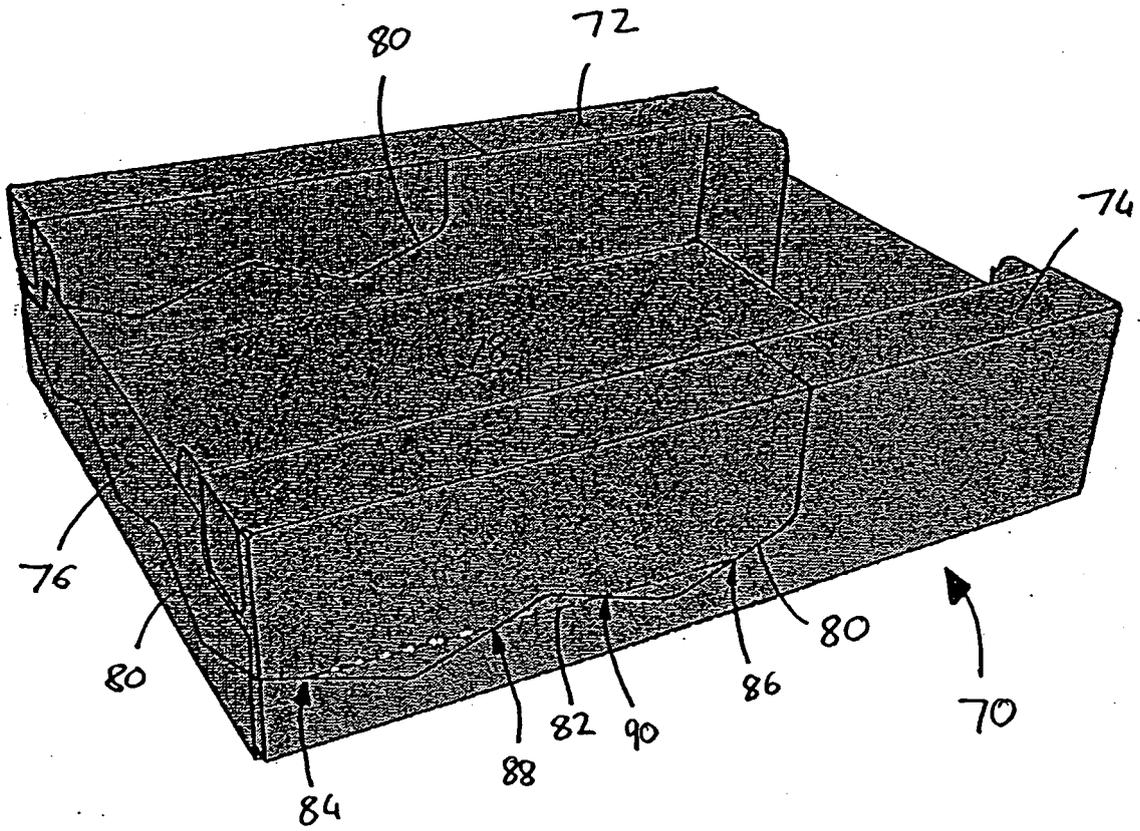


FIG. 4

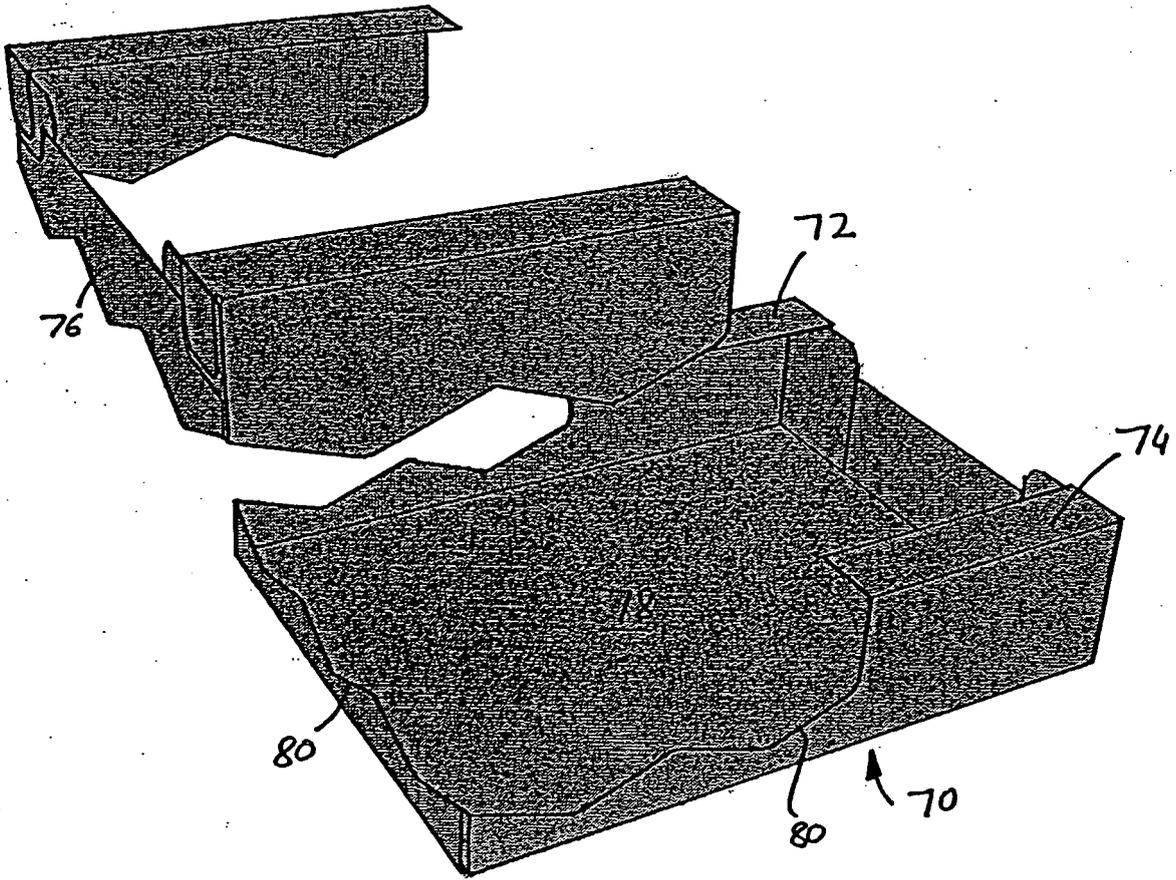


FIG. 5

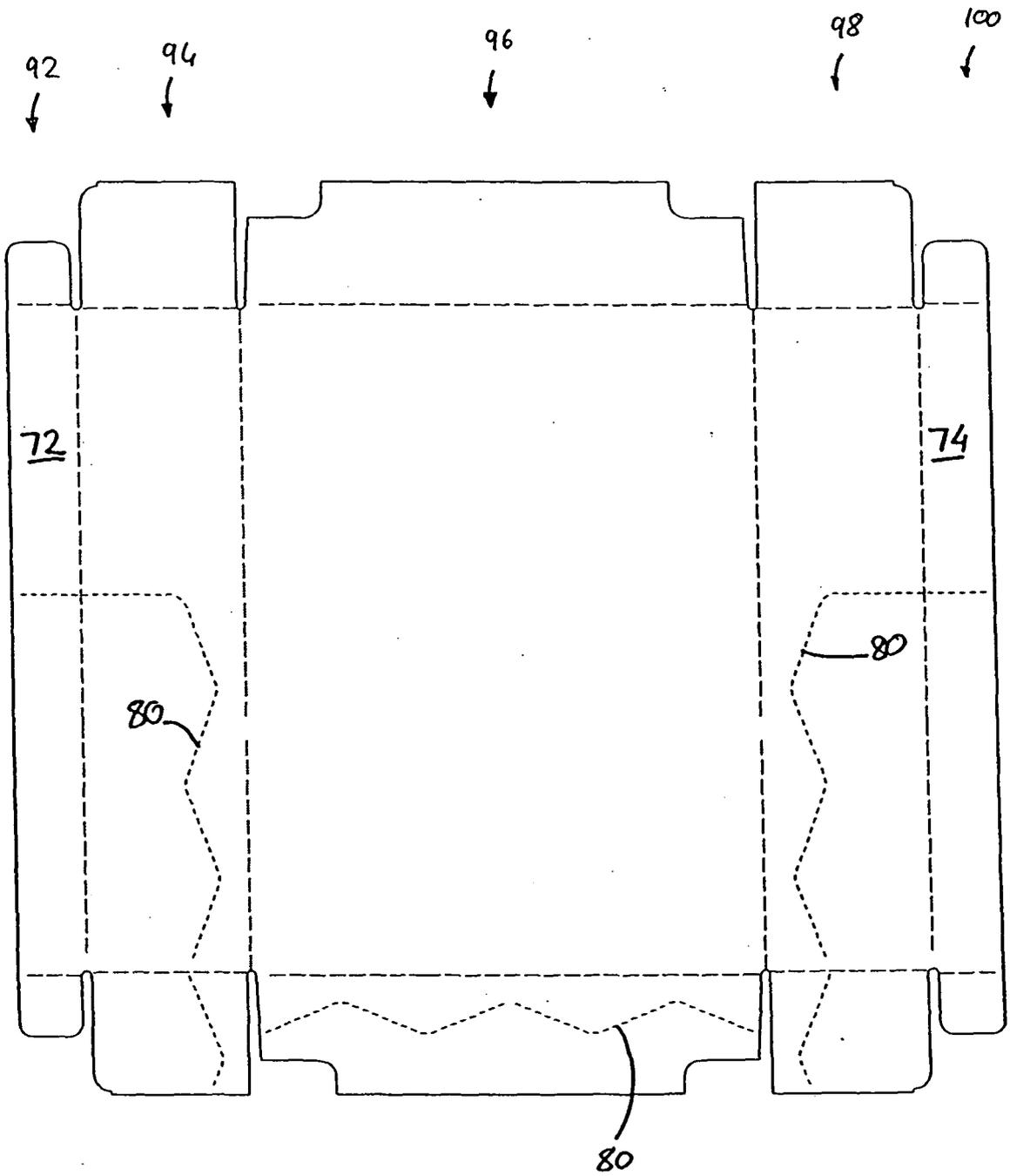


FIG. 6

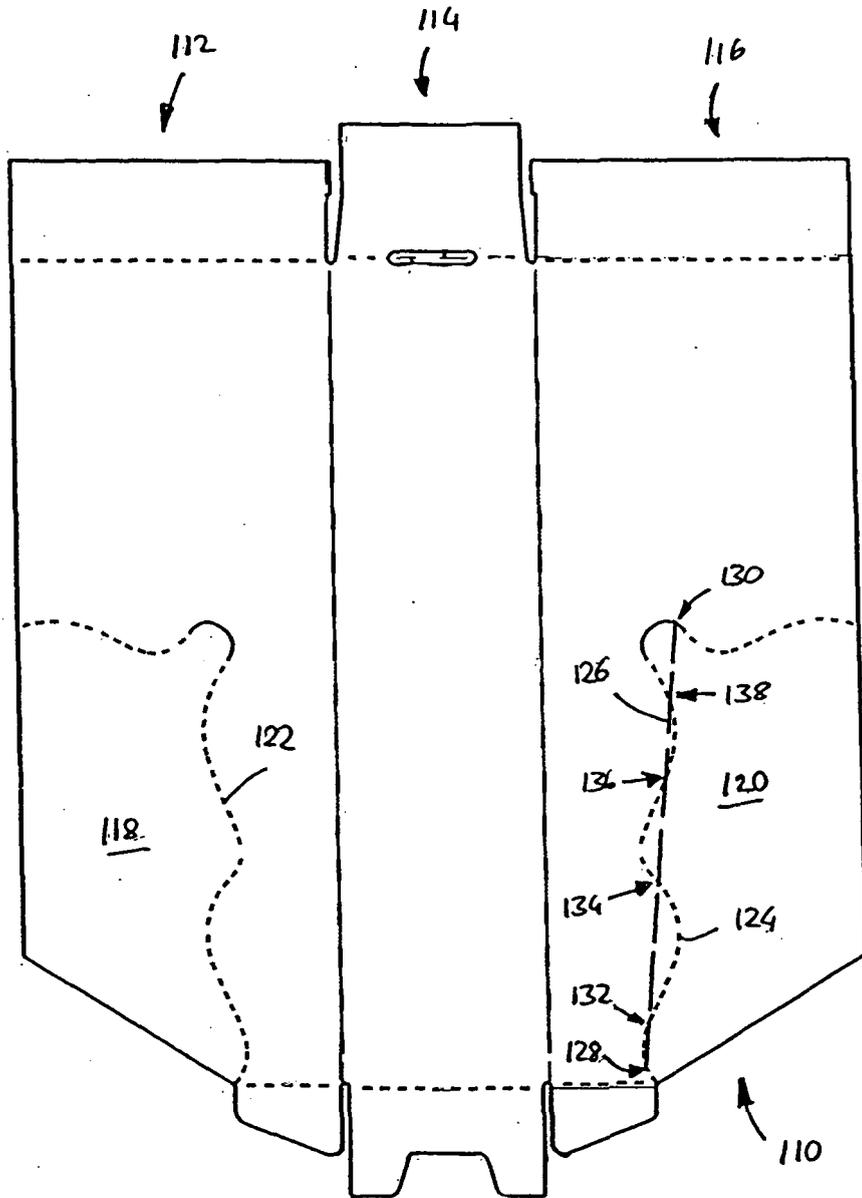


FIG 7

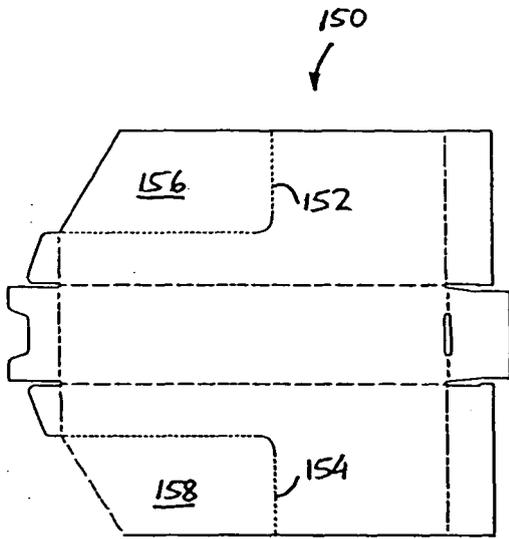


FIG. 8-1

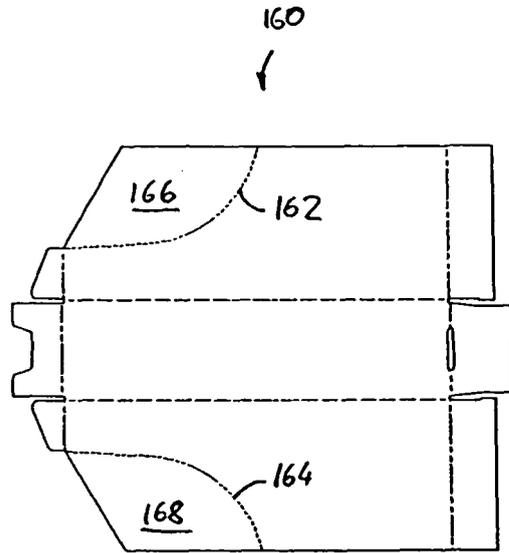


FIG. 8-2

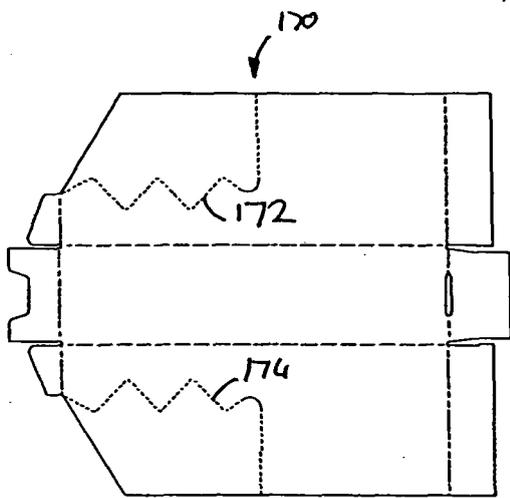


FIG. 8-3

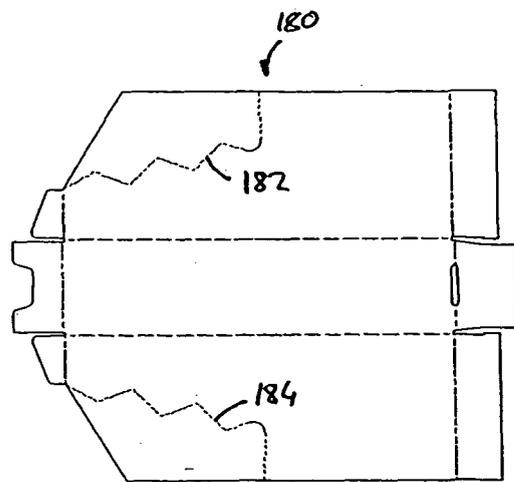


FIG. 8-4

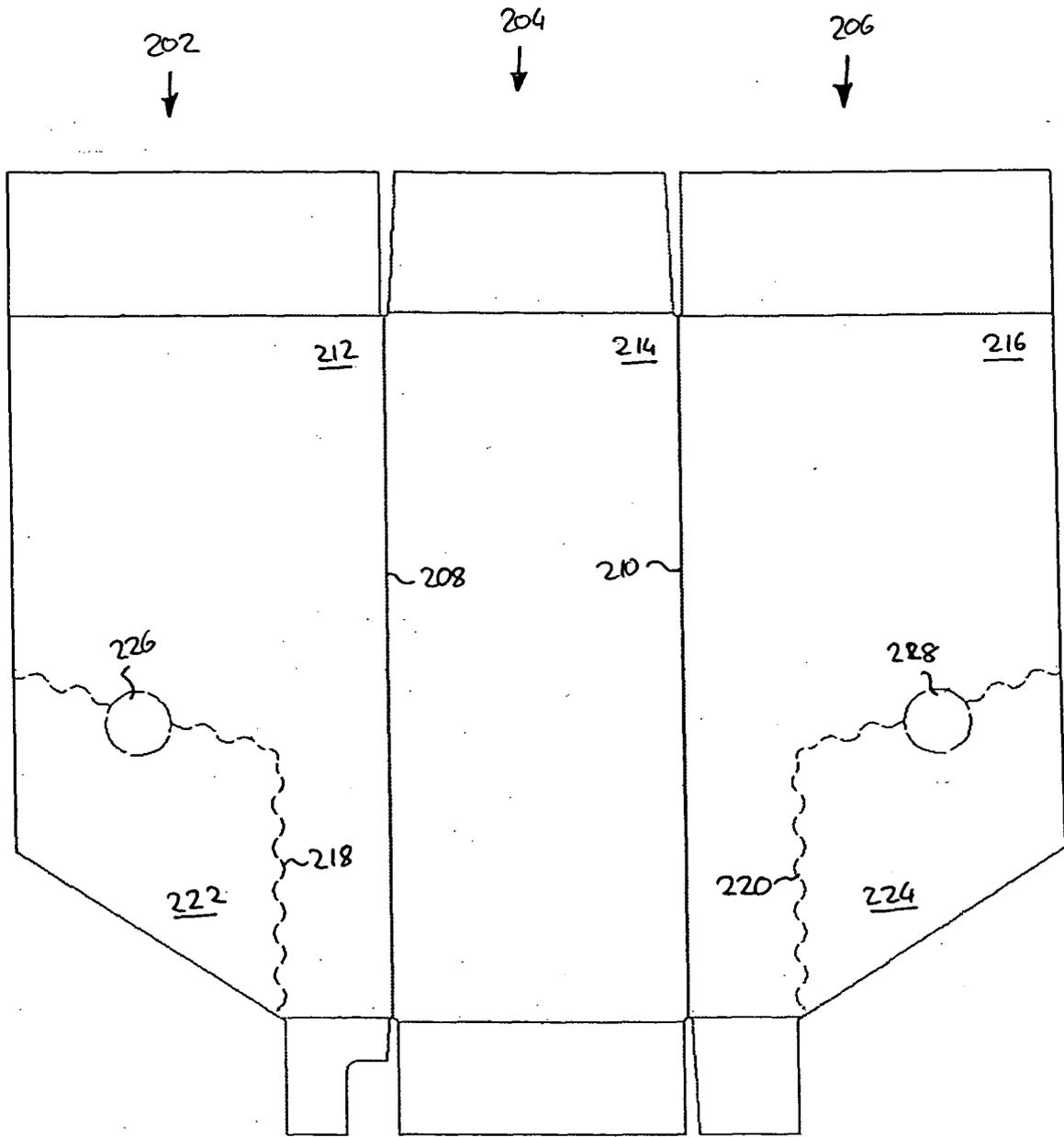


Fig. 9-1

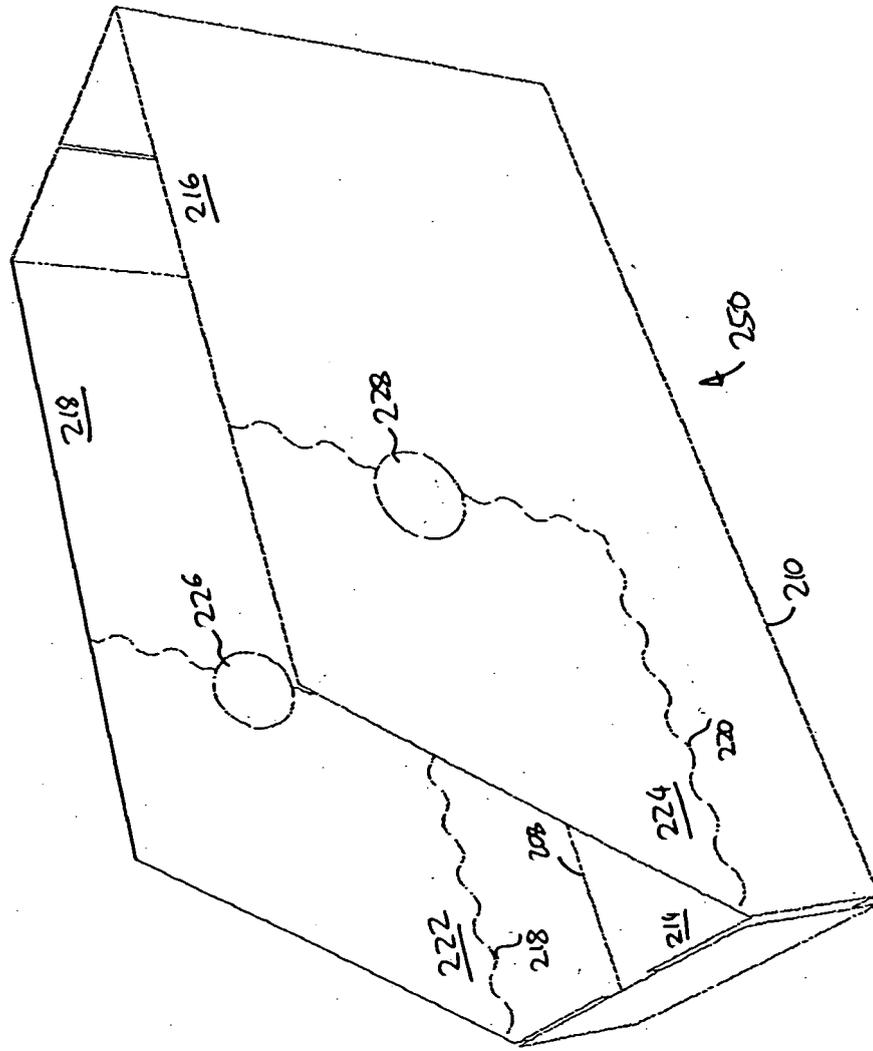


FIG. 9-2



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A	* paragraph [0026] - paragraph [0031] * * figures 3-5 *	9,10,12, 22,26-39	
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			B65D
The present search report has been drawn up for all claims			
Place of search		Date of completion of the search	Examiner
The Hague		18 November 2005	Smolders, R
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18-11-2005

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