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

(11) Publication number: **0 045 152**
B1

(12) # EUROPEAN PATENT SPECIFICATION

(45) Date of publication of patent specification: **02.05.85**

(51) Int. Cl.^{4}: **B 65 D 6/20**

(21) Application number: **81303213.3**

(22) Date of filing: **13.07.81**

(54) **Collapsible and erectable container.**

(30) Priority: **25.07.80 GB 8024470**
20.10.80 GB 8033791

(43) Date of publication of application:
03.02.82 Bulletin 82/05

(45) Publication of the grant of the patent:
02.05.85 Bulletin 85/18

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

(56) References cited:
AT-B- 29 746
AT-B- 165 425

(73) Proprietor: **Tattam, Francis Edward**
Neild House Beamond End
Near Amersham Buckinghamshire (GB)

(72) Inventor: **Tattam, Francis Edward**
Neild House Beamond End
Near Amersham Buckinghamshire (GB)

(74) Representative: **Gold, Tibor Zoltán et al**
T.Z.GOLD & COMPANY 9, Staple Inn
London WC1V 7QH (GB)

EP 0 045 152 B1

Courier Press, Leamington Spa, England.

Description

The invention concerns improvements in or relating to collapsible and erectable containers.

The present invention seeks to overcome certain difficulties experienced in banding erected containers of box form, especially when such containers are destined to carry goods for which a tightly sealed lid panel is unnecessary.

In conventional banding procedure, the bands simply run around the outer surface of the container. When there is no lid they extend across the open top surface of the container. This can be very inconvenient should the goods within the container have an irregular shape or project out of the container. Also, it is inconvenient for the bands running across the top of a lidless box or case because they may be caught and broken during handling, transportation and storage.

Summary of the Invention

Accordingly, the present invention seeks to remedy these drawbacks and provides a collapsible and erectable container (a term intended to be sufficiently compendious to include boxes, cases, crates, trays and the like) comprising a base panel and a pair of opposite side panels and a pair of opposite end panels, characterised in that a flexible strap is provided which interconnects either the panels of the pair of side panels or the panels of the pair of end panels, the strap being of such a length that when the two interconnected panels are laid flat with the strap taut, the panels are spaced apart by a dimension corresponding generally to the width of the base panel (if the interconnected panels are side panels) or the length of the base panel (if the interconnected panels are end panels), the said dimension being such that the base panel can be located on top of the strap spanning the interconnected panels when the latter are flat and such that the interconnected panels when swung upwardly about opposite edges of the base panel cause the strap to be tensioned and thereby to hold the interconnected panels in tight engagement with the base panel.

It will be appreciated that the distance between interconnected side panels or between interconnected end panels when laid flat with the strap taut need not be exactly the same as the width or the length of the base panel although it will always be approximately the same as the said width or length. What is important is that the distance between the side or end panels must be such that, when they are swung upwards about the base panel, the interconnecting strap is tensioned. Factors that lead to a deviation of the said distance between interconnected side (or end) panels from the exact width or length of the base panel include the elasticity of the strap and the width of the side (or end) panels and of the base panel. If a strap with a degree of elasticity is used, the distance between the interconnected panels can be less than if a less elastic strap is used since the elastic strap can be stretched a little to make up for the shorter distance between the panels. Also, if very thick panels are used, it will readily be appreciated that the distance between interconnected panels will have to be greater to pass around the edges of the panels than if the panels were thinner.

In one preferred embodiment, the length of each flexible strap and the configuration of the complementary co-operating edges of contiguous panels are such that on assembly of the container there is a small gap between the said edges through which each strap extends between the outside and the inside of the container. However, in an alternative preferred embodiment in which the panels are to abut tightly in the erected condition of the container, the gaps for the straps may be provided by suitably forming e.g. by notching the panels themselves, or by providing slots in the straps themselves.

In the container of the present invention, the entire interior of the container remains fully accessible to goods and yet the container is securely banded together. A loose (floating) lid may then also be secured to the container and readily removed therefrom without dismantling the whole container.

The straps may be of any suitable flexible material capable of withstanding repeated bending in either angular sense. The mode of securing the ends of the straps to the panels may also be varied considerably; thus they may be stapled or adhesively bonded (indeed the straps may be of commercially available adhesive tape or band) or they may be formed as plugs to fit tightly into corresponding recesses formed in the surfaces of the panels.

The strap may be in the form of an endless loop passing around the interconnected panels so as to completely or partially encircle the latter; it may partially encircle a panel by passing through an aperture in the panel. In the latter case, a slit may run from an edge of each panel, conveniently the edge in engagement with the base panel, into the aperture to enable the endless loop to be inserted into the aperture. The base panel may be completely detachable from the flexible strap, in which case during erection, the base panel is placed on the top of the portion of the strap spanning the panels, or the strap may be permanently attached to the underside of the base panel.

Preferably the adjacent edges of the base panel and/or the side panels and/or the end panels are provided with formations which act to guide upward pivotal movement of the side or end panels with respect to the base panel. These formations may take the form of the complementary recesses and projections which not only interengage during upward pivotal movement of the side or end panels to assist in defining the pivot axes about which the panels swing, but also interengage in the erected container to assist rigidity. Alternatively, or in addition, the formations are provided by rebates or recesses defined by the attachment to the interior side of each side

and/or end panel, of a strip or strips set back from the edge of the respective side or end panel adjacent the base panel. Opposite edges of the base panel locate in the recesses or rebates, and this location is very effective in defining the pivot axes about which the side or end panels are to be swung and resisting any tendency for the base panel to be squeezed upwardly by the upwardly pivoting side or end panels.

For most sizes of container, the interconnected panels are often joined by a plurality of spaced straps. The straps are conveniently made of a heat-sealable, flat plastics tape which is substantially non-extensible, extremely strong and readily joined by heat sealing to form the optional endless loop. Preferably, the side panels are interconnected by a strap or straps and also the end panels are interconected by a strap or straps (in the manner described above) so that in the erection of the container, the base panel is placed between the two side panels and between the two end panels (if the base panel is not already so located), the side panels and end panels being swung upwardly into vertical positions and held in these vertical positions, for example by an encircling band or strap, possibly aided by the interengagement of projections and recesses on the adjoining edges of the side and end panels. The resulting container is extremely strong and rigid, is easily collapsible and readily transportable in a collapsed, compact condition with its component panels flat. If desired, the side and end panels may be swung upwardly to enclose contents previously placed on the base panel, enabling packing of the contents and erection of the container to proceed in a single swift operation.

A collapsible and erectable container according to the invention may have a band of flexible material for encircling or substantially encircling the erected side and end panels and tightening means which are capable of being manually manipulated to tighten the band around the side and end panels by means of a progressive wedging action applied to the band, and to release the tightened band. The band may be an endless loop for completely encircling the side and end panels.

The tightening means preferably comprise a wedge with a width across its wedging faces, in relation to the dimension of the band, enabling the wedge to be pushed between the band and one end or side panel with a progressive wedging action which steadily tensions the band.

Said one end or side panel may have an opening to enable a portion of the band to be passed therethrough into the interior of the container, the wedge being inserted through this portion of the band and against the interior surface of said one end or side panel. The opening may be a slot having a horizontal width substantially equal to the thickness of the wedge plus twice the thickness of the material of the band, so that the band passes smoothly across the junction between the slot wall and the wedge without there being any pinching of the band between the wedge and said one panel (which would impede tightening of the band) and without there being undue clearance between the side faces of the wedges and the portions of the band passing thereacross (which would cause less effective retention of the wedge by the band).

The wedge is conveniently made from the same sheet material as the panels of the container, and the band is conveniently made from the flat plastics tape already mentioned.

Brief Description of the Drawings

The invention will now be described purely by way of example, with reference to the accompanying drawings, wherein:

Figure 1 is a plan view of a collapsed container forming a first embodiment of the invention;

Figure 2 is a sectional view through the erected container of Figure 1;

Figures 3 and 4 are views respectively corresponding to those of Figures 1 and 2 but of a container forming a second embodiment of the invention;

Figure 5 is an underside plan view of the base, end and side panels of a collapsed container forming a third embodiment of the invention, together with a top plan view of a lid of the container and additionally showing a wedge of the container; and

Figure 6 is a fragmentary perspective view showing the internal detail at one end of the erected container of Figure 5, and

Figures 7 to 9 show possible detail modifications.

Referring to Figures 1 and 2, the illustrated container has two side panels 101 which are identical and are generally rectangular but formed with projections and recesses around their peripheries as shown. The two side panels 101 are interconnected by two loops 102 of flexible, almost non-extensible, flat plastics tape the ends of which are heat sealed to form the continuous loops 102 which encircle both side panels. That is to say, each loop 102 passes over the surface of each side panel 101, the portion 102*a* of each loop 102 shown spanning the side panels 101 being the upper layer of two superimposed layers of the loop 102. The container also has two identical end panels 103 which are substantially square but formed with projections and recesses around their peripheries as shown. The two end panels 103 are interconnected by a further endless loop 104 of the plastics tape, this further loop 104 being similar to but longer than each of the loops 102.

On one side of each side panel 101 (the side visible in Figure 1) are attached two strips 105 of card or board, each loop 102 passing between the corresponding strip 105 and the side panel 101 in order to locate the loop 102 which, however, can be pulled lengthwise between the strips 105 and the side panel 101. A similar strip 106 is attached to each end panel 103. The loops 102 and 104 are of a length such that when the side and end panels 101, 103 are laid flat with the loops 102 and

104 taut (as shown in Figure 1) the side panels 101 and the end panels 103 are spaced apart to an extent enabling the base panel 107 (shown in the lower right-hand part of Figure 1) to be fitted between the side and end panels 101 and 103. The base panel 107 is also rectangular in general shape but is formed with projections and recesses which fit the recesses and projections respectively along the adjacent edges of the side and end panels 101 and 103.

To erect the panels shown in Figure 1, the two end panels 103 are laid flat with the loop 104 taut and the two side panels 101 are laid flat with the loops 102 taut and across the loop 104. The base panel 107 is then placed on top of the loops 102 and 104. The two side panels 101 and the two end panels 103 are then swung upwardly around their lower edges, the edges of the projections on the base panel 107 optionally being chamfered to facilitate this movement. During this pivoting movement the projections and recesses on the panels 101, 103 and 107 come into abutting engagement and therefore guide the pivotal movement of each side and end panel 101, 103 by defining the axis of pivotal movement. The edges 105*a*, 106*a* of the strips 105, 106 (i.e the edges closest to the base panel) assist in this guidance because they are set back from the outer edges of the projections by a dimension corresponding to the thickness of the base panel 107.

Figure 2 shows a sectional view, taken on the location VII—VII in Figure 1, but after the side panels 101 and end panels 103 have been swung upwardly to their vertical positions so as to form an open-topped container. Figure 2 illustrates the loops 102 as being slack so that they show: it will be appreciated that the loops 102 are in fact tensioned and act to hold the side panels 101 in firm engagement with the base panel. Along the four upright corners of the container, the projections and recesses on the side and end panels interengage and these panels may be held in position by stapling, adhesive or by an encircling band. A lid may be provided if desired.

The embodiment of container illustrated by the panels shown in Figures 3 and 4 is similar to that of Figures 1 and 2 and similar parts have been given the same reference numerals. Each side panel 101 is a rectangular board without projections or recesses. On the side of each side panel 101 visible in Figure 3 there is attached an elongated strip 105 of board or card. The edge 105*a* of each strip being set back from the adjacent edge of the side panel 101 by a dimension equal to the thickness of the base panel 107 which is plain rectangular board. An endless loop 102 of the plastics tape encircles both panels 101, passing between each strip 105 and the corresponding panel 101. In a similar fashion, the two end panels 103 are provided with respective strips 106 and are interconnected by an endless loop 104 of the plastics tape, the loop 104 passing between each strip 106 and the corresponding panel 103. The edge 106*a* of each strip is again set back from the adjacent edge of the end panel 103 by the thickness of the base panel 107.

Assembly of the container shown in Figures 3 and 4 follows the sequence described for Figures 1 and 2; the panels 101 and 103 and loops 102 and 104 are laid out as shown in Figure 8 and the base panel 107 is placed centrally between the panels 101 and 103 and on top of the portions of the loops spanning the panels. As the side and end panels 101 and 103 are pivoted upwardly, the edges of the base panel 107 locate within the rebates or recesses afforded by the setting back of the edges 105*a* and 106*a* and this location assists in defining the pivot axes and preventing the base panel 107 from being pushed upwardly by the converging side panels 101 and end panels 103.

Figure 4 (which is a sectional view taken at location IX—IX in Figure 3) shows the panels 101 after they have been swung to their vertical positions in which they are held in tight engagement with the base panel 107 by the taut loops which are again shown slack so that they appear in the drawing.

It will be appreciated that each strip 105 and 106 may be replaced by a plurality of shorter strips or by a strip of the form shown at 105 or 106 in Figure 1.

Figure 5 shows the panels of the third embodiment of container. The container again has two side panels 101, two end panels 103 and a base panel 107, but in this embodiment the base panel 107 is permanently connected to the panels 101 and 103 instead of being separable therefrom, as in the containers of Figures 1 and 3. It should be emphasized that Figure 5 shows an underside plan view of the panels 101, 103 and 107, i.e. shows the sides of the panels 101, 103 and 107 which would be laid upon a flat surface during erection of the container. In contrast to the previous embodiments described, the endless loops 102 and 104 do not completely encircle the side panels 101 and end panels 103, respectively. Instead, each side panel 101 is formed with three spaced slits 108 through which the loops 102 pass. Similarly, each end panel 103 is formed with two slits 109 through which the loops 104 pass. To enable the preformed, endless loops 102 and 104 to be inserted into the slits 108 and 109, the panels 101 and 103 are further cut or slit from their adjacent edges, each of these further cuts or slits running from the adjacent panel edge to the slit 108 or 109.

Where the loops 102 and 104 pass across the underside of the base panel 107, they are retained by three elongate strips 110 of card or board the longer edges of which stapled or otherwise secured to the underside of the panel 107, to hold the base panel 107 captive with respect to the loops 102 and 104 but enabling the loops 102 and 104 to be slid longitudinally between the strips 110 and the base panel 107. This helps to avoid the loops 102 and 104 becoming snagged and provides a means of locating one erected container upon another when the containers are stacked. This location for stacking is achieved by attaching strips 112 to the upper surface of the lid

panel 113 in a configuration such that the strips 112 on the upper surface of the lid panel 113 nest within spaces left between the strips 110 on the underside of the base panel 107. The edges of the panels 101, 103 and 113 are formed with the projections and recesses shown, these inter-engaging in the erected container.

The container of Figure 5 also includes a wedge 114 which is conveniently cut from the same sheet material as the panels 101, 103, 107 and 113. The wedge 114 is generally rectangular but has an angled edge 115 imparting the tapering profile shown. The wedge 114 is used to tighten an endless loop 116 (Figure 6) of the plastics tape around the erected side panels and end panels 101 and 103 in order to hold these panels in their vertical positions, as illustrated by the fragmentary view of Figure 6. After the side and end panels 101 and 103 have been swung upwardly about the base panel 107, in the manner previously described in connection with Figures 3 and 4, the endless loop 116 is passed around the erected panels 101 and 103 and a portion 117 of the loop 116 is inserted, through a slot 118 in one end panel 103, into the interior of the partially erected container. The wedge 114 is then pushed downwardly, with the smaller end of its tapering profile leading, into the loop portion 117, extending into the interior of the container. As the wedge 114 is pushed downwardly, it draws more of the loop 116 through the slot 118 and thereby progressively tightens the loop 116 around the panels 101 and 103. This progressive wedging action provides a very effective way of tightening the loop 116 manually, without the need for a banding machine.

The wedge 114 may be left to project perpendicularly from the end panel 103, or may be swung to lie against the interior surface of the panel 103, this having the effect of applying a further slight tensioning to the loop 116. The wedge 114 may be secured against the end panel 103 by adhesive tape or a staple, or the contents of the container can be used to hold the wedge 114 against the interior surface of the end panel 103. The wedge 114 can be simply withdrawn to loosen the loop 116 and enable the container to be collapsed.

The width of the slot 118 is substantially equal to the thickness of the wedge 114 plus twice the thickness of a single run of the loop 116, so that the latter can be drawn smoothly through the slot 118 during wedging and so that the wedge 114 is adequately supported on its side faces by the loop portion 117 passing thereacross. The height of the slot 118 is considerably less than the height of the wedge 114, the latter being urged against the interior surface of the end panel 103 both above and below the slot 118 when the loop 116 is tightened. A strip similar to the strip 105 of Figure 3 is attached to the opposite surface of each panel 101 from that visible in Figure 5, and a strip similar to the strip 106 of Figure 3 is attached to the opposite surface of each panel 103 from that visible in Figure 5.

The described embodiments of Figures 1 to 6 can be repeatedly erected and collapsed without weakening of the hinges formed by the loops 102 and 104, can be collapsed to a flat, compact condition for transport or storage and can if desired by erected with the intended contents supported on the base panel 107.

Figures 7 and 8 are diagrammatic sectional views of a container having opposite side panels 101 and a base panel 107 interconnected by a broad loop or strap 120 formed from paper, plastics or other flexible material. The two thicknesses of the material of the loop 120 are preferably secured together over the length of the strap which passes under the base panel 107, in which case, the panels 101 are located in pockets 122 formed in the portions of the loop not secured together. The loop or strap 120 may have a substantial dimension in the direction perpendicular to the plane of Figures 7 and 8, and the term strap is to be construed broadly as including such a configuration. The internal surfaces of the pockets 122 may be coated with adhesive, e.g. a water-soluble adhesive enabling wetted side panels 101 to be inserted into the pockets 122 and retained therein by the adhesive. The external surfaces of the straps may be printed with advertising material, instructions for use of the contents of the container or any other information. Figure 7 shows the side panels 101, in their pre-shaped pockets 122, being swung towards their vertical positions illustrated in Figure 8. End panels (not shown) of the container are interconnected by a strap similar to strap 120. Thus, the box shown in Figs. 7 and 8 works on the same principle as that shown in Fig. 1, the main difference between the two however, is that a single broad loop has been used in the box shown in Figs. 7 and 8 in the place of the two loops 102 shown in Fig. 1 and a further broad loop has been used in the box shown in Figs. 7 and 8 in place of the single loop 124 shown in Fig. 1.

Figure 9 shows a shaped metal strip 124 which can be used to assist assembly and final rigidity of a side panel 101 and base 107 of a container. The strip 124 has a vertical limb 125 forming an abutment for the vertical side panel 101 and a horizontal limb 126 forming the base of a recess accommodating the edge of the base panel 107. The horizontal ledge of the strip 124 adjoining the limb 125 serves to locate the lower edge of the panel 101. Since a plurality of such strips 124 (laced between the straps) locates the panels 101, 103 and 107, the panel edges need not be provided with recesses or projections nor provided with the strips such as shown at 105 and 106 in Figure 3. However, the straps, for example, loops 102 and 104 shown in Fig. 1, must still be provided when using a metal strip 124, which strip serves merely to assist in assembly and to improve rigidity.

Claims

1. A collapsible and erectable box comprising a

base panel (107) and a pair of opposite side panels (101) and a pair of opposite end panels (103), characterized in that a flexible strap (102, 104) is provided which interconnects either the panels of the pair of side panels (101) or the panels of the pair of end panels (103) the strap (102, 104) being of such a length that when the two interconnected panels (101, 103) are laid flat with the strap taut, the panels are spaced apart by a dimension corresponding generally to the width of the base panel (if the interconnected panels are side panels (101)) or the length of the base panel (if the interconnected panels are end panels (103)), the said dimension being such that the base panel (107) can be located on top of the strap (102, 104) spanning the interconnected panels (101, 103) when the latter are flat and such that the interconnected panels (101, 103) when swung upwardly about opposite edges of the base panel (107) cause the strap to be tensioned and thereby to hold the interconnected panels (101, 103) in tight engagement with the base panel (107).

2. A container according to claim 1 characterized in that the strap (102, 104) is an endless loop passing round the side or end panels (101, 103) so as to partially or completely encircle the latter.

3. A container according to claim 2, characterised in that the strap (102, 104) passes through an aperture (108) in at least one panel of the pair of interconnected panels (101, 103), thereby partially encircling the said panel(s).

4. A container according to claim 3, characterised in that in each panel provided with an aperture, a slit runs from an edge of the panel to the aperture to enable the endless loop to be inserted in the aperture.

5. A container according to any of claims 1 to 4, characterised in that the base panel (107) is completely detachable from the flexible strap (102, 104), and during erection, the base panel (107) is placed on top of the portion of the strap spanning the interconnected panels.

6. A container according to any of claims 1 to 4, characterised in that the strap (102, 104) is permanently attached to the underside of the base panel (107).

7. A container according to any of claims 1 to 6, characterised in that adjacent edges of the base panel and the interconnected panels are provided with formations which act to guide upward pivotal movement of the interconnected panels (101, 103) with respect to the base panel (107), the formations being in the form of complementary recesses and projections which not only interengage during upward pivotal movement of the panels, (101, 103) to assist in defining the pivot axis about which the panels (101, 103) swing, but also interengage in the erected container to assist rigidity; or said formations being provided by rebates or recesses defined by the attachment to the interior of each panel of a strip or strips (105) set back from the edge of the panel adjacent the base panel.

8. A container as claimed in any one of claims 1 to 7, characterised in that it also includes a band (116) for encircling the two side panels (101) and the two end panels (103).

9. A container according to claim 8, characterised in that it includes a wedge (114) which is capable of being inserted between the band (116) and a side or end panel to tighten the band (116) around the side and end panels.

10. A container according to claim 9, characterised in that at least one side or end panel has an opening (118) to enable a portion of the band to be passed therethrough into the interior of the container, the wedge (114) being inserted through this portion of the band to abut against the interior surface of said one end or side panel; and wherein the said opening has a horizontal width substantially equal to the thickness of the wedge (114) plus twice the thickness of the material of the band.

11. A container as claimed in any one of claims 1 to 10, characterised in that the pair of side panels (101) are interconnected by at least one strap (102) and the pair of end panels (103) are also interconnected by at least one further strap (104).

12. A container as claimed in claim 1, characterised in that the strap (102, 104) passes between the edge portions of the base panel (107) and the contiguous edge portion of each interconnected panel (101, 103).

Patentansprüche

1. Zusammenklappbarer und aufrichtbarer Behälter mit einer Bodenplatte (107), einem Paar einander gegenüberliegender Seitenplatten (101) und einem Paar einander gegenüberliegender Stirnplatten (103), dadurch gekennzeichnet, daß ein flexibles Band (102, 104) vorgesehen ist, von welchem die Platten des Seitenplattenpaares (101) oder die Platten des Stirnplattenpaares (103) miteinander verbunden sind, wobei das Band (102, 104) in seiner Länge derart bemessen ist, daß die beiden miteinander verbundenen Platten (101, 103), wenn sie bei gestrafftem Band flachliegen, in einem Abstand voneinander angeordnet sind, der im wesentlichen der Breite der Bodenplatte (wenn die miteinander verbundenen Platten die Seitenplatten 101 sind) oder der Länge der Bodenplatte (wenn die miteinander verbundenen Platten die Stirnplatten (103) sind) entspricht und der so groß ist, daß einerseits die Bodenplatte (107) bei flachliegenden, von dem Band überquerten miteinander verbundenen Platten (101, 103) auf die Oberseite des Bandes (102, 104) gelegt werden kann und andererseits die miteinander verbundenen Platten (101, 103) bei ihrem Hochschwenken um die einander gegenüberliegenden Kanten der Bodenplatte (107) das Band spannen, so daß dadurch die miteinander verbundenen Platten (101, 103) in engem Eingriff mit der Bodenplatte (107) gehalten werden.

2. Behälter nach Anspruch 1, dadurch gekennzeichnet, daß das Band (102, 104) eine Endlosschleife ist, die rings um die Seiten- oder Stirn-

platten (101, 103) verläuft, so daß es die Platten teilweise oder vollständig umgibt.

3. Behälter nach Anspruch 2, dadurch gekennzeichnet, daß das Band (102, 104) durch eine Öffnung (108) wenigstens einer Platte des Paares aus miteinander verbundenen Platten (101, 103) verläuft, so daß dadurch diese Platte (n) von dem Band teilweise umgeben ist (sind).

4. Behälter nach Anspruch 3, dadurch gekennzeichnet, daß in jeder mit einer Öffnung versehenen Platte von einer Kante der Platte zu der Öffnung ein Schlitz verläuft, damit die Endlosschleife in die Öffnung eingelegt werden kann.

5. Behälter nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, daß die Bodenplatte (107) vollständig von dem flexiblen Band (102, 104) lösbar ist und während des Aufrichtens des Behälters auf die Oberseite des Bandabschnittes zwischen der miteinander verbundenen Platten gelegt wird.

6. Behälter nach einem der Ansprüche 1 bis 4, dadurch gekennzeichnet, daß das Band (102, 104) dauerhaft an der Unterseite der Bodenplatte (107) befestigt ist.

7. Behälter nach einem der Ansprüche 1 bis 6, dadurch gekennzeichnet, daß die benachbarten Ränder der Bodenplatte und der miteinander verbundenen Platten mit Formteilen versehen sind, von welchen die miteinander verbundenen Platten (101, 103) bei deren Aufwärtsschwenkbewegung gegenüber der Bodenplatte (107) geführt werden, wobei die Formteile in Form von komplimentär zueinander angeordneten Ausnehmungen und Vorsprüngen gestaltet sind, die nicht nur während der Aufwärtsschwenkbewegung der Platten (101, 103) einander in Eingriff stehen, um zur Bestimmung der Schwenkachse beizutragen, um welche die Platten (101, 103) geschwenkt werden, sondern auch bei aufgerichteten Behälter ineinandergreifen, um die Steifigkeit zu verbessern, oder die Formteile in Form von Nuten oder Ausnehmungen gestaltet sind, die durch die Befestigung von einer oder mehrerer Leisten (105) an der Innenseite jeder Platte gebildet werden, die gegenüber der Bodenplatte benachbarten Kante der Platte versetzt sind.

8. Behälter nach einem der Ansprüche 1 bis 7, dadurch gekennzeichnet, daß der Behälter auch ein Band (116) aufweist, von welchem die beiden Seitenplatten (101) und die beiden Stirnplatten (103) umgeben sind.

9. Behälter nach Anspruch 8, dadurch gekennzeichnet, daß ein Keil (114) vorgesehen ist, der zwischen das Band (116) und eine Seitenplatte oder eine Stirnplatte zum Festziehen des Bandes (116) rings der Seiten- und Stirnplatten einsetzbar ist.

10. Behälter nach Anspruch 9, dadurch gekennzeichnet, daß wenigstens eine Seiten- oder Stirnplatte eine Öffnung (118) aufweist, durch die ein Teil des Bandes in das Innere des Behälters hindurchführbar ist, wobei der Keil (114) durch diesen Teil des Bandes derart hindurchgesteckt ist, daß er sich gegen die Innenfläche der Seiten- oder Stirnplatte abstützt, wobei die Öffnung eine horizontale Weite aufweist, die im wesentlichen gleich der Dicke des Keiles (114) zuzüglich der zweifachen Dicke des Bandmaterials ist.

11. Behälter nach einem der Ansprüche 1 bis 10, dadurch gekennzeichnet, daß das die Platten (101) des Seitenplattenpaares über wenigstens ein Band (102) und auch die Platten (103) des Stirnplattenpaares wenigstens über ein zusätzliches Band (104) miteinander verbunden sind.

12. Behälter nach Anspruch 1, dadurch gekennzeichnet, daß das Band (102, 104) zwischen die Kantenteile der Bodenplatte (107) und den angrenzenden Kantenteil eines jeden der miteinander verbundenen Platten (101, 103) hindurchgeführt ist.

Revendications

1. Conteneur pliable et érigible comprenant un panneau de base (107), une paire de panneaux latéraux opposés (101) et une paire de panneaux d'extrémité opposés (103), caractérisé en ce qu'il est prévu une courroie flexible (102, 104) qui réunit soit les panneaux de la paire de panneaux latéraux (101), soit les panneaux de la paire de panneaux d'extrémité (103), la courroie (102, 104) étant d'une longueur telle que, lorsque les deux panneaux interconnectés (101, 103) sont disposés à plat avec la courroie tendue, les panneaux sont écartés d'une distance qui correspond généralement à la largeur du panneau de base (si les panneaux réunis sont les panneaux latéraux (101)) ou à la longueur du panneau de base (si les panneaux réunis sont les panneaux d'extrémité (103)), ladite distance étant telle que le panneau de base 107 peut être disposé sur le dessus de la courroie (102, 104) allant d'un panneau interconnecté à l'autre (101, 103), lorsque ces derniers sont à plat, et telle que la courroie est tendue et maintient ainsi les panneaux réunis (101, 103) en engagement étroit avec le panneau de base (107), lorsque les panneaux réunis (101, 103) ont pivoté vers le haut autour des bords opposés du panneau de base (107).

2. Conteneur selon la revendication 1, caractérisé en ce que la courroie (102, 104) est une boucle sans fin passant autour des panneaux latéraux ou d'extrémité (101, 103) de manière à les encercler partiellement ou totalement.

3. Conteneur selon la revendication 2, caractérisé en ce que la courroie (102, 104) passe par une ouverture (108) prévue dans au moins un panneau de la paire de panneaux réunis (101, 103), encerclant ainsi partiellement le ou lesdits panneaux.

4. Conteneur selon la revendication 3, caractérisé en ce que, dans chacun des panneaux pourvus d'une ouverture, une fente va d'un bord du panneau à l'ouverture pour permettre à la boucle sans fin d'être insérée dans l'ouverture.

5. Conteneur selon l'une quelconque des revendications 1 à 4, caractérisé en ce que le panneau de base (107) est complétement détachable de la courroie flexible (102, 104) et en ce que, pendant l'érection, le panneau de base (107) est

disposé sur le dessus de la partie de la courroie s'étendant entre les panneaux réunis.

6. Conteneur selon l'une quelconque des revendications 1 à 4, caractérisé en ce que la courroie (102, 104) est fixée en permanence à la face inférieure du panneau de base (107).

7. Conteneur selon l'une quelconque des revendications 1 à 6, caractérisé en ce que les bords adjacents du panneau de base et des panneaux réunis comportent des formations qui guident le mouvement de pivotement vers le haut (101, 103) par rapport au panneau de base (107), ces formations se présentant sous la forme d'évidements et de projections complémentaires qui, non seulement s'interpénètrent pendant le mouvement de pivotement vers le haut des panneaux (101, 103) pour aider à la définition de l'axe de pivotement autour duquel les panneaux (101, 103) pivotent, mais également interpénètrent le conteneur érigé pour contribuer à sa rigidité; ou lesdites formations sont formées par des rabats ou des évidements définis par la fixation, à l'intérieur de chaque panneau, d'un ruban ou de rubans (105) en arrière des bords du panneau adjacent au panneau de base.

8. Conteneur selon l'une quelconque des revendications 1 à 7, caractérisé en ce qu'il comprend également une bande (116) adaptée à encercler les deux panneaux latéraux (101) et les deux panneaux d'extrémité (103).

9. Conteneur selon la revendication 8, caractérisé en ce qu'il comprend une cale (114) qui peut être insérée entre la bande (116) et un panneau latéral ou d'extrémité pour tendre la bande (116) autour des panneaux latéraux et d'extrémité.

10. Conteneur selon la revendication 9, caractérisé en ce qu'au moins un panneau latéral ou d'extrémité comporte une ouverture (118) pour permettre à une partie de la bande d'y être introduite vers l'intérieur du conteneur, la cale (114) étant insérée au travers de cette partie de la bande pour venir en butée contre la surface intérieure dudit panneau d'extrémité ou latéral; et en ce que ladite ouverture a une largeur horizontale substantiellement égale à l'épaisseur de la cale (114) plus deux fois l'épaisseur du matériau de la bande.

11. Conteneur selon l'une quelconque des revendications 1 à 10, caractérisé en ce que la paire de panneaux latéraux (101), est réunie par au moins une courroie (102) et en ce que la paire de panneaux d'extrémité (103) est également réunie par au moins une courroie supplémentaire (104).

12. Conteneur selon la revendication 1, caractérisé en ce que la courroie (102, 104) passe entre les parties d'extrémité du panneau de base (107) et le bord contigü de chaque panneau réuni (101, 103).

FIG.1

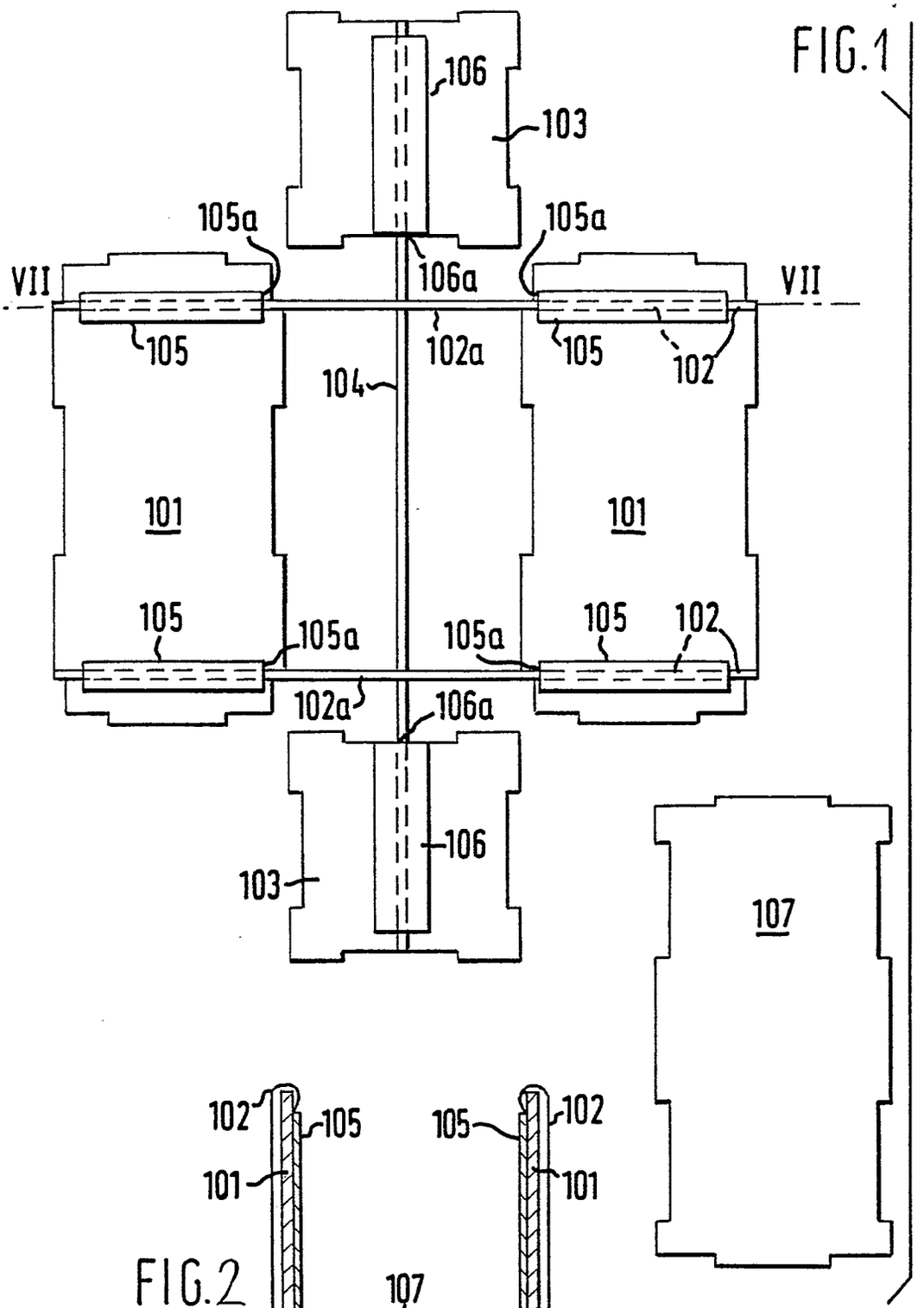

106
103
105a
105a
VII
106a
VII
105
102a
105
102
104
101
101
105
105a
105a
105
102
102a
106a
106
103
107

FIG.2

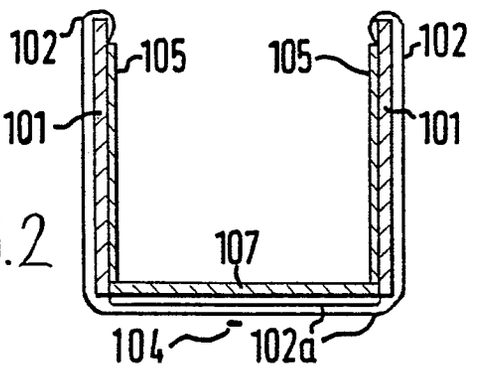

102
105
105
102
101
101
107
104
102a

FIG.3

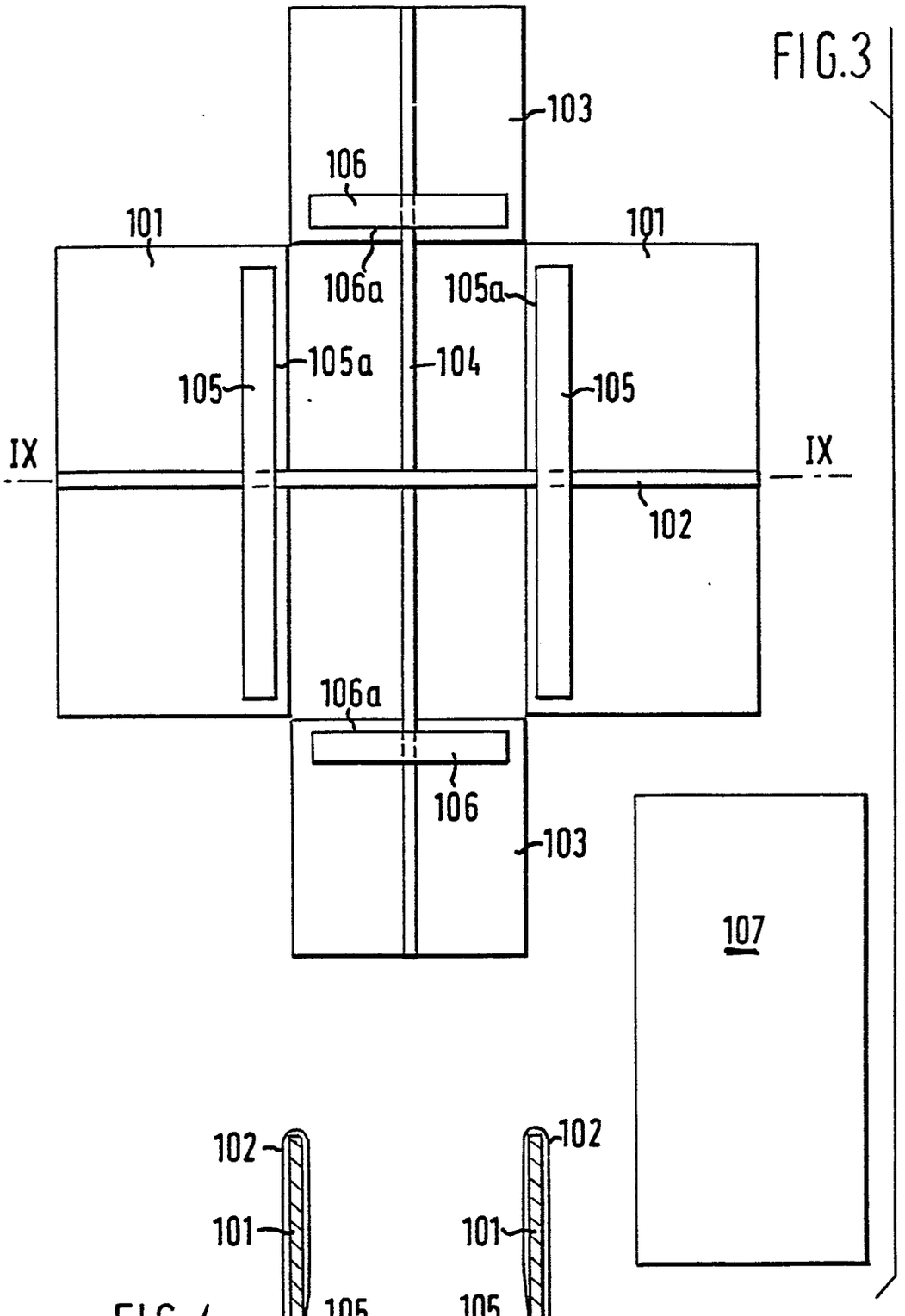
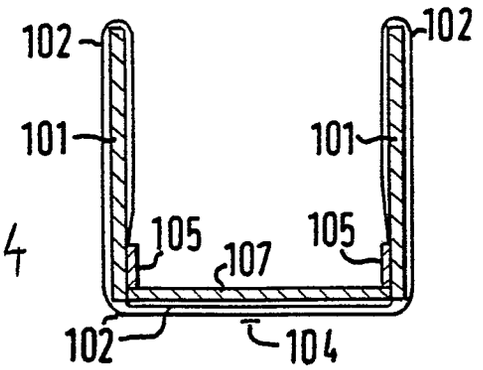

103
106
101
101
106a
105a
105a
104
105
105
IX
IX
102
106a
106
103
107

FIG.4


102
102
101
101
105
105
107
102
104

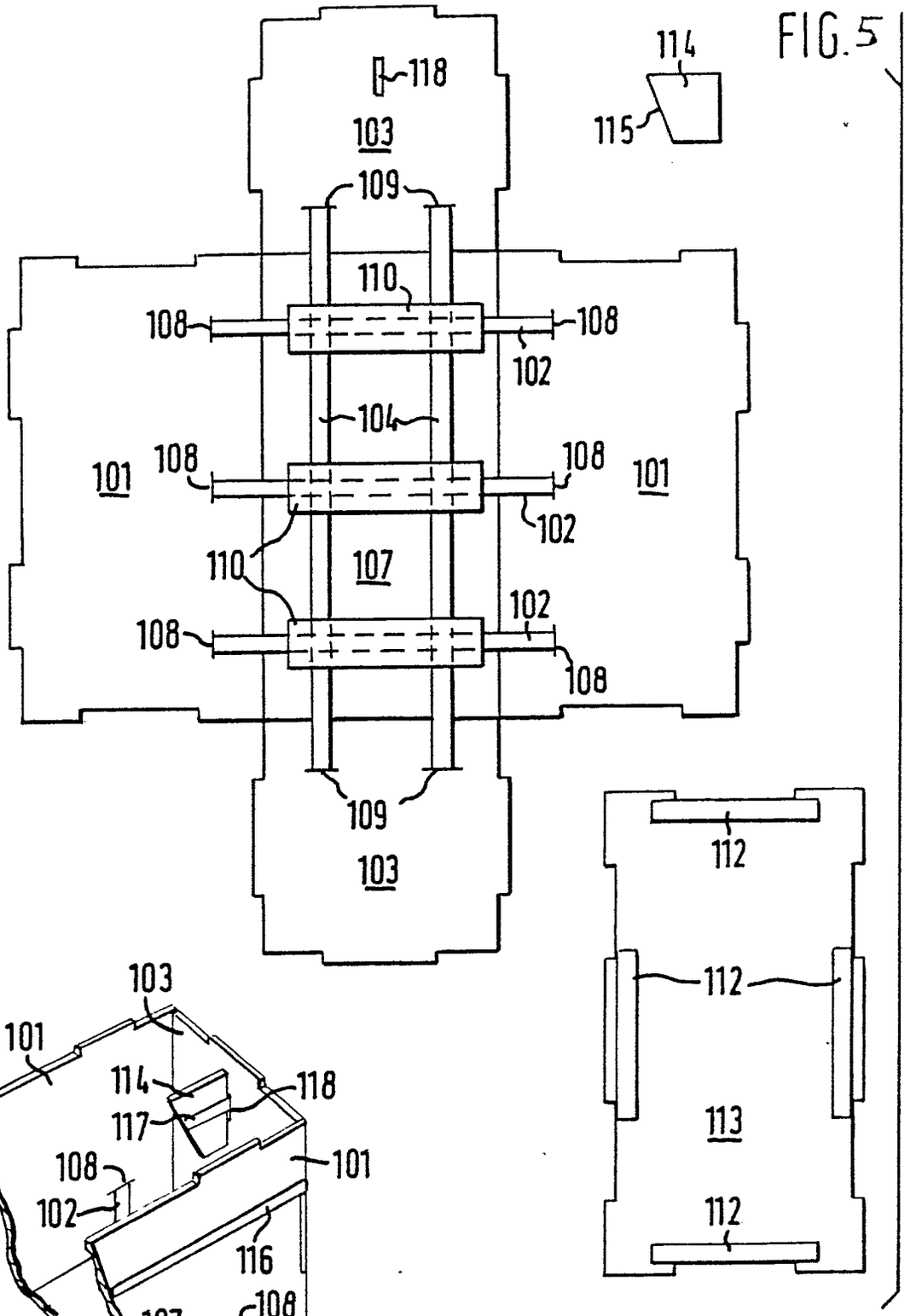

118
103
109
110
108
102
104
101
107
114
115
112
113

FIG. 5

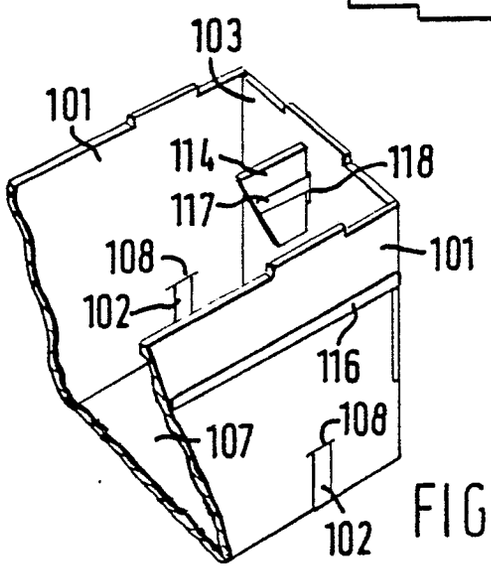

103
101
114
118
117
108
102
101
116
107
108
102

FIG. 6

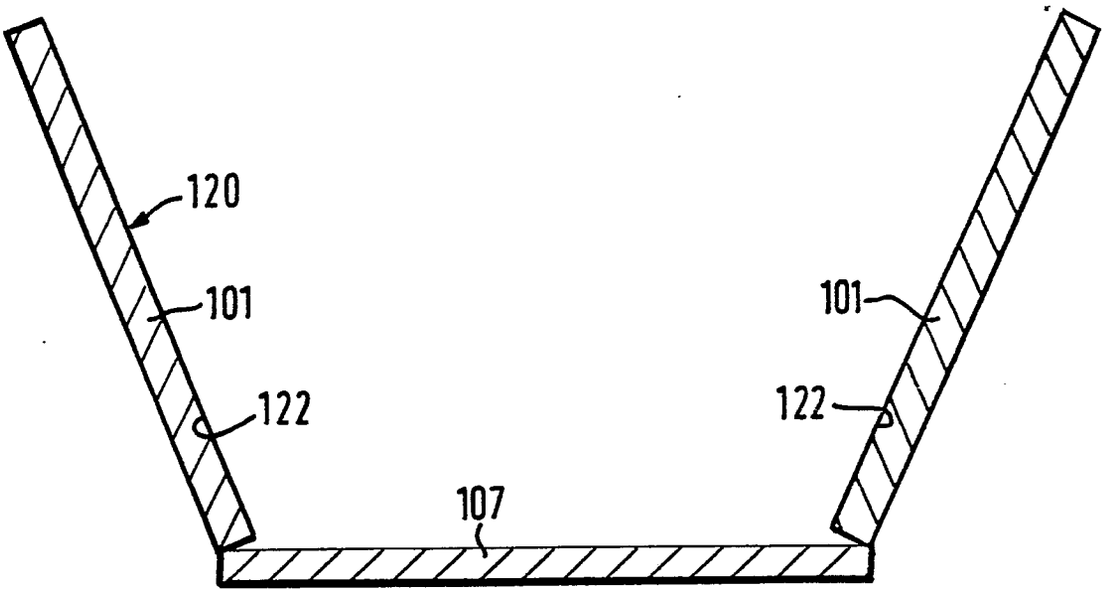


FIG. 7

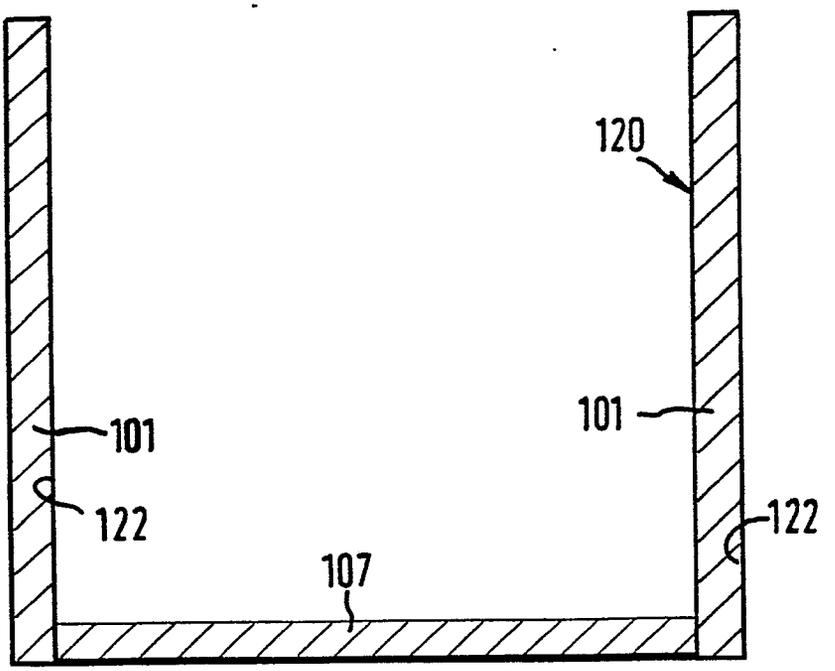


FIG. 8

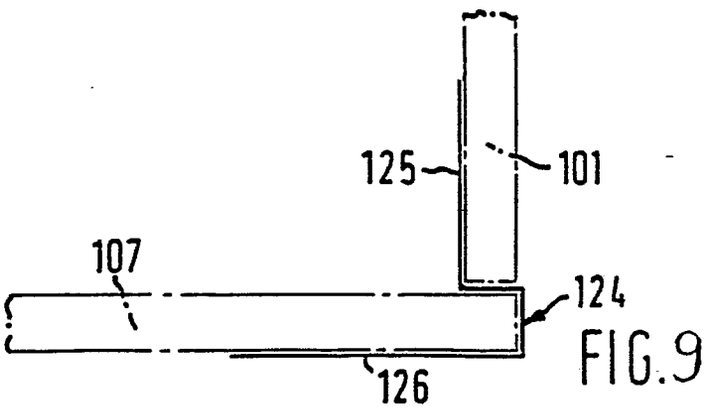


FIG.9