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(54) Tray of relatively yieldable material such as thin cardboard or plastics material, in particular for packaging food products.

(57) The tray comprises a container body (2) having an open upper face and provided with an upper rim (3) to which a flexible sheet (10) is fixed to cover said open upper face; to re-use the sheet (10) to again cover the container body (2) after the tray has been opened, a sectional rim weakening line (5) is provided parallel to the longitudinal extension of the rim (3), to divide the rim (3) into two strips, namely an inner strip (31) and an outer strip (32), which occupy at least part of the longitudinal extension of the rim (3), said line (5) enabling the two rim strips (31) and (32) to be separated from each other by tearing; in addition the cover sheet (10) is fixed to the rim (3) by a fixing band (4) situated on said outer rim strip (32) a short distance from the weakening line (5); finally, coupling means are provided in the container body (2) to fasten the cover sheet (10) onto the open face of the container body (2) after the two rim strips (31) and (32) have been separated from each other.

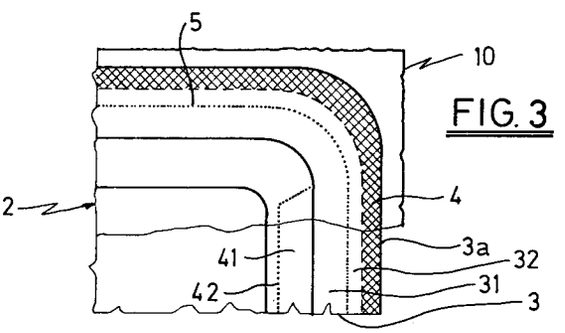

FIG. 3

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This invention relates to a tray suitable for packaging objects and in particular food products, which is of relatively yieldable material, ie material which can be easily separated by tearing along a possible sectional weakening line, such as thin cardboard or plastics material.

The tray of the invention is of the type comprising a container body, the upper face of which is open and provided with an upper rim which surrounds said upper open face, and further comprises a flexible sheet fixed to the upper rim to cover said open upper face.

Trays of the aforesaid type are used at food retail sales outlets for packaging products sold loose (such as salted meats, fish, cheeses etc.). The products are placed in the container body, which is then closed by the plastics sheet, this being welded at the sales outlet to the rim of the container body. This makes transportation of the products and their possible subsequent preservation in the home easier and more economical.

A further use of said trays is to contain prepacked products in which the cover sheet is sealed onto the container body before distribution to sales outlets.

At the moment of use the cover sheet is torn off or otherwise removed from the rim, to open the container body and enable its contents to be withdrawn. The tray then remains open, and if at least a part of its contents has not been used there is the problem of again closing the tray to protect and isolate its remaining contents. This problem is currently solved by wrapping the container body in a sheet of metal foil or equivalent material, or in plastic sheets; alternatively the remaining contents are placed in a different container for preservation.

An object of the present invention is to solve said technical problem by means of an improved tray which makes it easier and more practical to protect the tray contents after the tray has been opened. A further object of the invention is to facilitate removal of the cover sheet fixed to the tray rim, this operation currently being generally difficult and in some case requiring the use of auxiliary implements.

Said objects are attained by the tray of the aforesaid type as characterised in the claims.

The invention is described in detail hereinafter with the aid of the accompanying figures, which illustrate some embodiments thereof.

Figure 1 is a plan view from above of the tray according to the invention before detaching the cover sheet from the upper rim.

Figure 2 is a plan view from above of only the container body of Figure 1.

Figure 3 is an enlarged detail of Figure 1.

Figures 4A, 4B and 4C show three sections on the line IV-IV of Figure 1 during different stages of the use of the tray.

Figure 5 is a plan view from above of a second embodiment of the tray according to the invention before detaching the cover sheet from the upper rim.

Figures 6A, 6B and 6C show three sections on the line VI-VI of Figure 5 during different stages of the use of the tray.

Figure 7 is a plan view from above of a third embodiment of the tray according to the invention before detaching the cover sheet from the upper rim.

Figures 8A, 8B and 8C show three sections on the line VIII-VIII of Figure 7 during different stages of the use of the tray.

The tray of the invention comprises a container body 2 with an open upper face and an upper rim 3 surrounding said open upper face.

In the tray shown in the figures, the container body 2 comprises a lower base 21 of substantially rectangular plan and four inclined side walls 22, the upper part of which is bent outwards to define the rim 3, which is flat and horizontal in the case of the first two embodiments, and of more complex shape in the case of the third embodiment.

The container body 1 is formed of relatively yieldable material, ie such that it can be easily separated by tearing with the hands along a possible sectional weakening line. Typically, the container body 2 is formed of thin cardboard possibly lined with a thin film of thermo-weldable plastics, or can be formed of thin plastics.

The open upper face of the container body 2 is closed after the products to be packaged have been introduced, by a flexible sheet 10 which is fixed to the upper rim 3 along a fixing band 4 (ie a band along which the sheet 10 and the rim 3 are joined together); said band 4 is indicated in Figures 1, 3, 5 and 7 by cross-hatching.

In particular, the cover sheet 10 can be conveniently formed of thermo-weldable plastics and can be fixed to the rim 3 conveniently by thermo-welding (if at least the upper surface of the rim 3 is of thermo-weldable material). The sheet 10 can be fixed onto the rim 3 either before delivery to the sales outlets, or at the sales outlets themselves to package products sold loose. According to the invention, the rim 3 is provided, parallel to its longitudinal extension, with a sectional rim weakening line 5 which divides the rim 3 into two concentric strips, namely an inner strip 31 and an outer strip 32 (Figures 1-6). Said line 5 extends along at least the entire length of a first side of the rim 3 and at least part of the length of the two sides adjacent to this first side. Said line 5 is such as to enable the two rim strips 31 and 32 to be separated from each other along said line by tearing. Said line 5 can be formed as a continuous incision through only part

of the rim thickness (shown in Figures 4A and 6A) or as an aligned series of small perforations, or in any other manner, such that the user can separate the rim 3 along the line 5 by tearing with the hands.

In the embodiment shown in Figures 1-4, the line 5 extends along the whole of the side 3a of the rim 3 (ie the vertical right hand side in Figures 1-3) and along practically the whole of the sides 3b adjacent to the side 3a, but does not extend along the side 3c opposite the side 3a.

The fixing band 4 is also parallel to the longitudinal extension of the rim 3, and in the region comprising the weakening line 5 is arranged on the outer strip 32 of the rim a slight distance from the line 5.

In any region not comprising the line 5, for example on the side 3c in Figure 1, the fixing band can cover the entire width of the rim 3.

Consequently, after tearing the rim 3 along the line 5, the outer strip 32 remains joined to the sheet 10 and the inner strip 31 remains joined to the container body 2 (as shown in Figures 4B and 6B); and the sheet 10 can be raised from the upper face of the container body 2 to enable the contained products to be withdrawn. In addition, in the case illustrated in Figures 1-3, the sheet 10 continues to remain joined to the rim 3 on its side 3c.

According to the invention, the tray comprises coupling means, formed in the container body 2, for fastening the sheet 10 onto the open upper face of the tray after the two rim strips 31 and 32 have been separated from each other; said means act by coupling within the region defined between the sheet 10 and the inner edge 32' of the strip 32, this edge not being fixed to the sheet 10.

In one embodiment (shown in Figures 4A, 4B and 4C), said coupling means comprise one or more tabs 41 formed within the container body 2 in the region comprising the weakening line 5, and specifically in the side wall 22 corresponding to the side 3a (or in the inner strip 31).

Said tabs 41 are formed by breaking through the section along a corresponding cut-through or sectional weakening line 42 which defines three sides of the tab 41, the fourth side being completely joined to the container body 2. Said line 42 can be a line cut entirely through the thickness of the side wall 22 or can be a weakening line of the same type as the line 5, which allows breakthrough along the line 42 by manually pressing.

The tabs 41 are shaped such as to possess a lower edge 43 which projects outwards and downwards to enable it to be inserted into said coupling region defined between the sheet 10 and the inner edge 32' of the outer strip 32.

In a different embodiment illustrated on Figures 6A, 6B and 6C, the coupling means are defined by the outer edge 31' of the inner rim strip 31, said outer edge 31' being able to be inserted into said coupling region defined between the sheet 10 and the inner edge 32' of the rim outer strip 32.

In the embodiment illustrated in Figures 1-3, the coupling means provided have their tab 41 in the side wall 22 corresponding to the side 3a of the rim 3.

In the embodiment illustrated in Figure 5, the weakening line 5 extends along the entire perimeter of the rim 3 and coupling means are provided on the two opposing sides 3a and 3c. The coupling means provided on the side 3a are of the type comprising a tab 41 as shown in Figures 4A, 4B and 4C, whereas the means provided on the side 3c are of the type shown in Figures 6A, 6B and 6C.

In the embodiment illustrated in Figures 7 and 8, the upper rim 3 is of more complex shape than in the preceding embodiments.

In this respect, the rim 3 is formed of a first substantially horizontal portion 35 in an upper end position, a second substantially horizontal portion 36 in a position lower than the first portion 35, and an intermediate portion 37 inclined to the first portion and joining the two portions 35 and 36 together. Said weakening line 5 is formed along the joining region between the intermediate portion 37 and the second portion 36, and specifically within the folded corner between the portions 37 and 36 or as close to this corner as possible. The line 5 can extend along the entire perimeter of the rim 3 (as shown in Figure 7) or along only a part thereof (similar for example to the embodiment of Figure 1).

Said line 5 divides the rim 3 into an inner strip formed by the second portion 36, and an outer strip formed by the first portion 35 and intermediate portion 37. Said inner and outer strip correspond to the strips 31 and 32 of the precedingly described embodiments.

The cover sheet 10 is fixed to the first portion 35, said fixing band 4 occupying the outer margin 35' of the portion 35, while leaving the inner margin 35'' of said portion 35 free. The coupling means are defined by the outer edge 31' of the second portion 36, this edge, after separating the outer strip 35, 37 from the inner strip 36 along the line 5, being inserted into the coupling region defined between the sheet 10 and the inner edge 32' of the intermediate portion 37 (see Figures 8A, 8B and 8C).

The weakening lines 5 and 42 are conveniently formed in the container body 2 during the manufacture of the container body itself. On fixing the sheet 10 onto the rim 3, the region in which these latter are joined together is limited to the band 4, the fixing being done either before distribution to the sales outlets, or at the moment of sale.

The product is hence packaged in a closed tray offering the same product protection as in the case of known trays.

To detach the sheet 10 from the rim 3 in order to open the tray, the user tears the rim along the line 5 (this stage is shown schematically in Figures 4B, 6B and 8B), this operation being easier than in the case of known trays because of the weakening line 5.

If the user then wishes to still use the tray, for example for preserving in it that part of the products which has not been consumed, the invention enables the upper face of the container body 2 to be again covered to protect and better preserve the contents, by using the actual cover sheet 10 which was initially fixed to the rim 3.

To achieve this, in the embodiment illustrated in Figures 1-4, the user presses with his fingers against the tabs 41 (hence tearing along the lines 42 if these are weakening lines instead of a continuous cut) to make their edges 43 project outwards from the side wall 22; he then pulls the sheet 10 horizontally outwards from the container body 2 to consequently elastically deform the container body 2 and/or elastically stretch the sheet 10, after which he folds the sheet 10 about the outer edge 31' of the inner strip 31 and inserts the lower edge 43 of the tabs 41 between the inner edge 32' of the outer strip 32 (fixed to the sheet 10) and the sheet 10 (as shown in Figure 4C).

The sheet 10 hence remains coupled to the container body 2 along its side 3a by the tabs 41, whereas along the opposite side 3c it is joined to the rim 3 via the original fixing region. The sheet 10 is therefore taut and extends to cover the entire upper surface of the container body 2.

In the embodiment shown in Figures 5 and 6 the sheet 10 is detached from the rim 3 along its entire perimeter. To subsequently refasten the sheet 10, along the side 4c the outer edge 31' of the inner strip 31 is inserted between the inner edge 32' of the outer strip 32 and the sheet 10 (as shown in Figure 6C), so coupling the side 3c of the rim 3 to the corresponding side of the sheet 10, whereas on the side 3a the tabs 41 are used in the same manner as heretofore described for the preceding embodiment.

The coupling means can obviously be provided on all sides of the container body 2.

Moreover, the coupling means can be defined along the entire perimeter of the container body 2 by the outer edge 31' of the rim inner strip 31, the outer edge 31' being inserted into the coupling region defined between the sheet 10 and the inner edge 32' of the rim outer strip 32, ie the embodiment illustrated in Figures 6A, 6B and 6C is repeated along the entire tray perimeter.

In the embodiment illustrated in Figures 7 and 8, the sheet 10 is detached along the entire tray perimeter.

To again attach the sheet 10, the outer edge 31' of the second portion 36 is inserted between the inner edge 32' of the intermediate portion 37 and the sheet 10 (as shown in Figure 8C); in this manner, the intermediate portion 37 is brought into contact with the outer surface of the side walls 22, while the portion 36 is inserted between the sheet 10 and that margin 35'' of the portion 35 which is not fixed to the sheet 10.

The described coupling means (Figures 8A, 8B and 8C) are preferably provided along the entire perimeter of the tray. Alternatively, said coupling means can be provided only along three sides of the tray, whereas the sheet 10 is left joined to the container body 2 along the fourth side (in a manner similar to the first embodiment illustrated in Figures 1-4).

In this third embodiment there is the advantage that the outer strip 35, 37 is more rigid and resistant to deformation because of the simultaneous presence of two mutually inclined portions 35 and 37.

The invention provides the advantage of facilitating detachment of the sheet 10 from the container body 2 (when this is still sealed), and in addition allows easy reuse of the sane sheet 10 to again cover the upper face of the container body 2.

Numerous modifications of practical and applicational nature can obviously be made to the invention. For example, in Figures 1-4, with each tab 41 there can be associated an underlying symmetrically opposing identical tab having its upper edge mating with the edge 43. In this case, this underlying tab can be positioned external to the outer strip 32 during coupling, to reinforce the coupling action.

Again, the container body 2 can be of different shape to that illustrated in the figures, and in particular can be of any geometrical form in plan view.

In addition, holes 9 can be provided in the container body 2, for example in the highest part of the container body 2 (as shown in Figures 7 and 8), to allow air to pass if this is desirable for the packaged product.

Claims

1. A tray of relatively yieldable material such as thin cardboard or plastics material, in particular for packaging food products, comprising a container body (2) having an open upper face and provided with an upper rim (3) which surrounds said open upper face, and comprising, for covering said open upper face, a flexible sheet (10) fixed onto the upper rim (3), characterised in that:

- a sectional rim weakening line (5) is provided parallel to the longitudinal extension of the rim (3), to divide the rim (3) into two strips, namely an inner strip (31), (36) and an outer strip (32), (35, 37) which occupy at least part of the longitudinal extension of the rim (3), said line (5) enabling the two rim strips (31), (36) and (32), (35, 37) to be separated from each other along the line (5) by tearing;
- the cover sheet (10) is fixed to the upper rim (3) by a fixing band (4) parallel to the longitudinal extension of the rim (3) and situated on said outer rim strip (32), (35, 37) at a distance from the weakening line (5);
- coupling means are provided in the container body (2) to enable the cover sheet (10) to be fastened onto the upper open face of the container body (2) after the two rim strips (31), (36) and (32), (35, 37) have been separated from each other, the coupling occurring in the region defined between the sheet (10) and the inner edge (32'), not fixed to the sheet (10), of the rim outer strip (32), (35, 37).

2. A tray as claimed in claim 1, characterised in that said coupling means comprise at least one tab (41) formed within the container body (2) in the region comprising the weakening line (5), by breaking through the body section along a corresponding cut-through or sectional weakening line (42), said tab (41) having a lower edge (43) which projects outwards and downwards to enable it to be inserted into said coupling region defined between the sheet (10) and the inner edge (32') of the outer strip (32).

3. A tray as claimed in claim 1, characterised in that said coupling means are defined by the outer edge (31') of the rim inner strip (31), after the two rim strips (31) and (32) have been separated from each other said outer edge (31') being able to be inserted into said coupling region defined between the sheet (10) and the inner edge (32') of the rim outer strip (32).

4. A tray as claimed in claim 1, characterised in that said weakening line (5) extends along the entire perimeter of the upper rim (3), coupling means being provided on at least two opposing sides of the rim (3).

5. A tray as claimed in claim 1, characterised in that

- said upper rim (3) has a first substantially horizontal portion (35) in an upper end position, a second substantially horizontal portion (36) in a position lower than the first portion (35), and an intermediate portion (37) inclined to the first portion (35) and joining the first portion (35) and the second portion (36) together;
- said weakening line (5) is formed along the joining region between the intermediate portion (37) and the second portion (36), said line (5) dividing the rim (3) into an inner strip formed by the second portion (36) and an outer strip formed by the first portion (35) and the intermediate portion (37);
- the cover sheet (10) is fixed to the first portion (35), said fixing band (4) occupying the outer margin (35') of the first portion (35) and leaving the inner margin (35'') of the first portion (35) free;
- said coupling means are defined by the outer edge (31') of the second portion (36), said outer edge (31'), after separating the outer strip (35, 37) from the inner strip (36), being inserted into the coupling region defined between the sheet (10) and the inner edge (32') of the intermediate portion (37).

FIG. 2

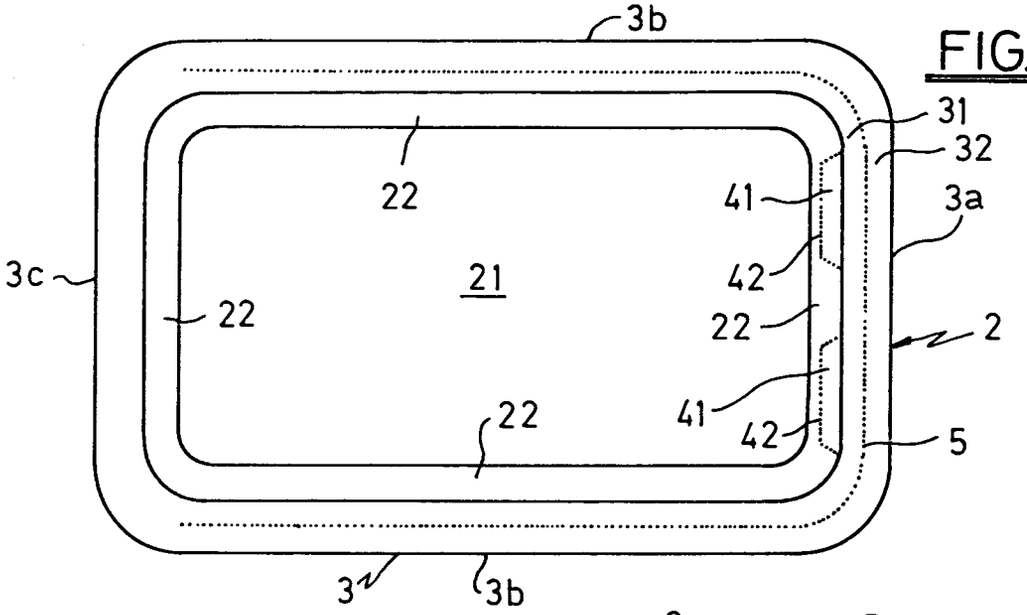


FIG. 1

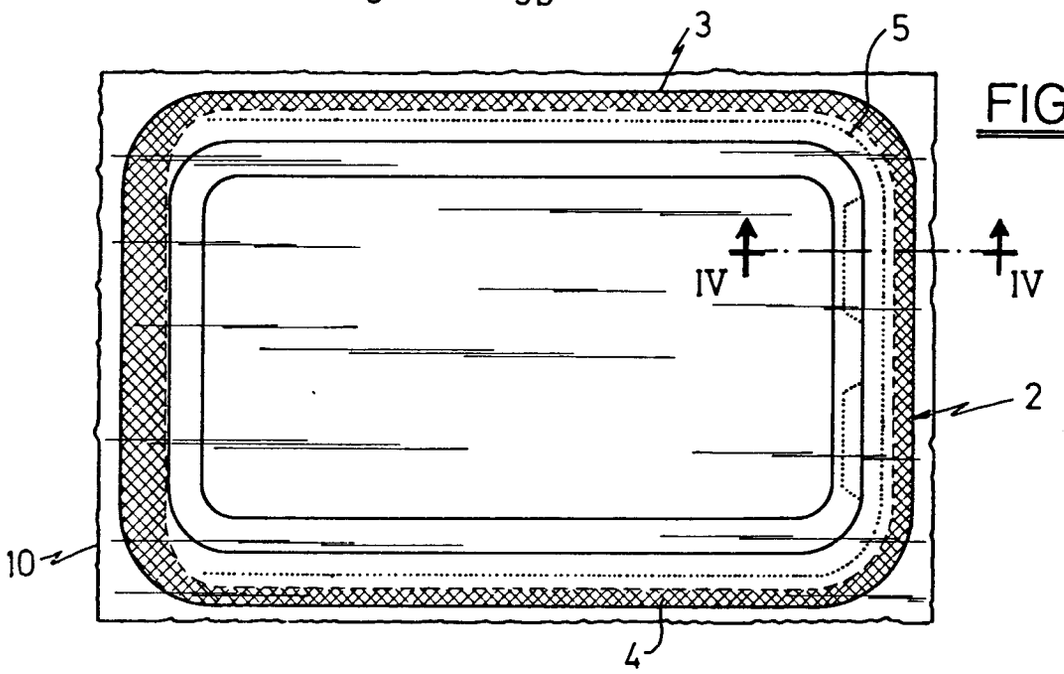
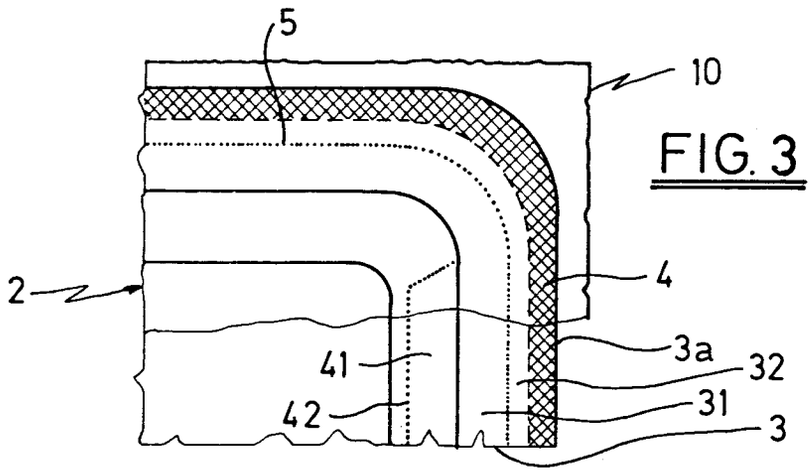


FIG. 3



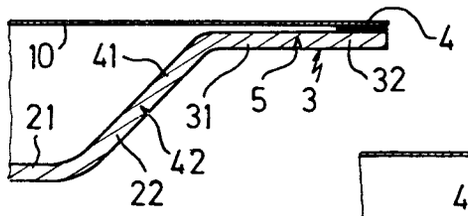


FIG. 4A

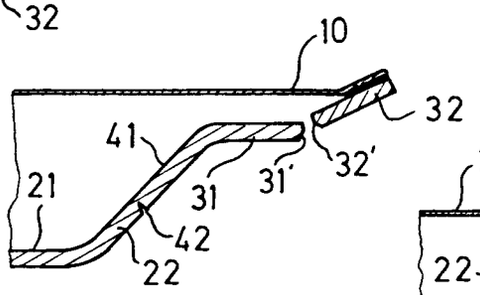
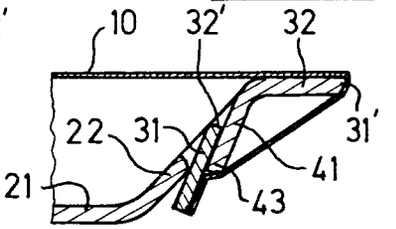


FIG. 4B

FIG. 4C



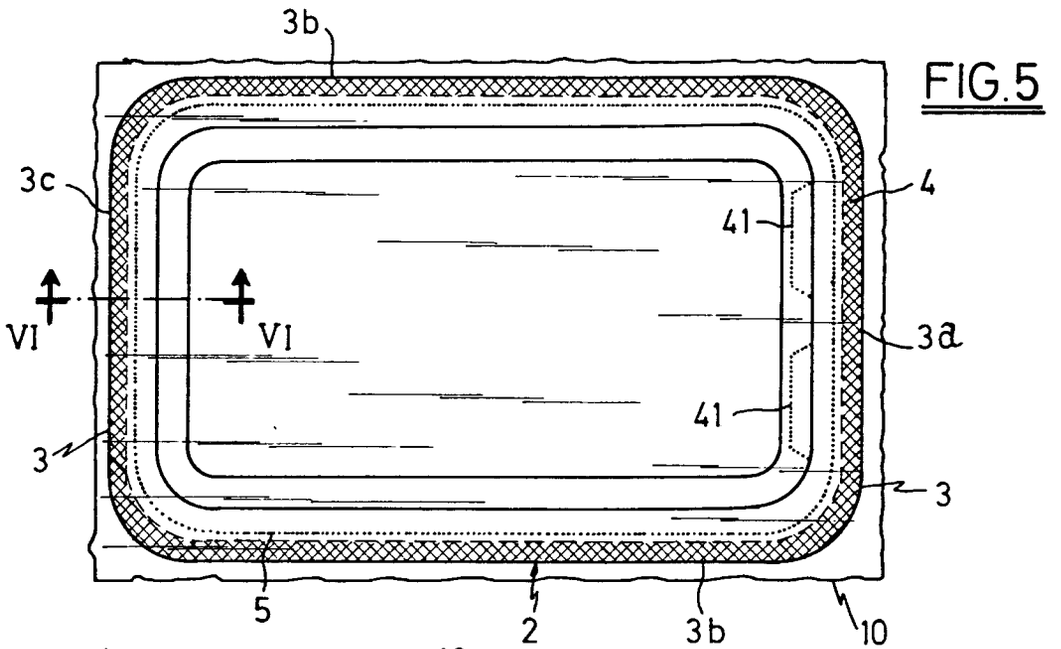


FIG. 5

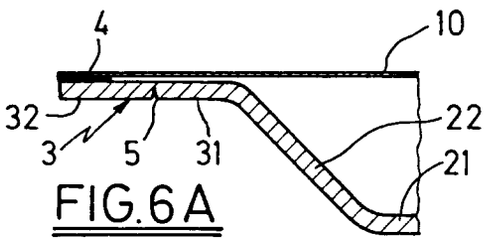


FIG. 6A

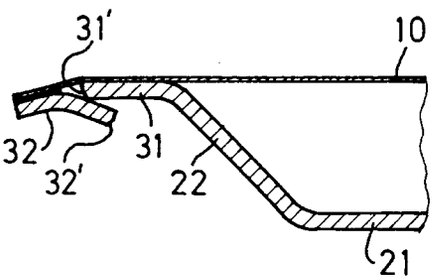


FIG. 6C

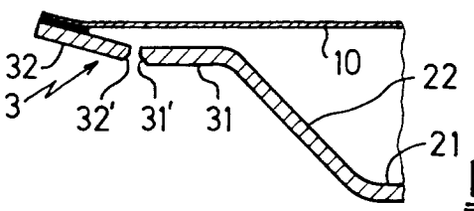


FIG. 6B

FIG.7

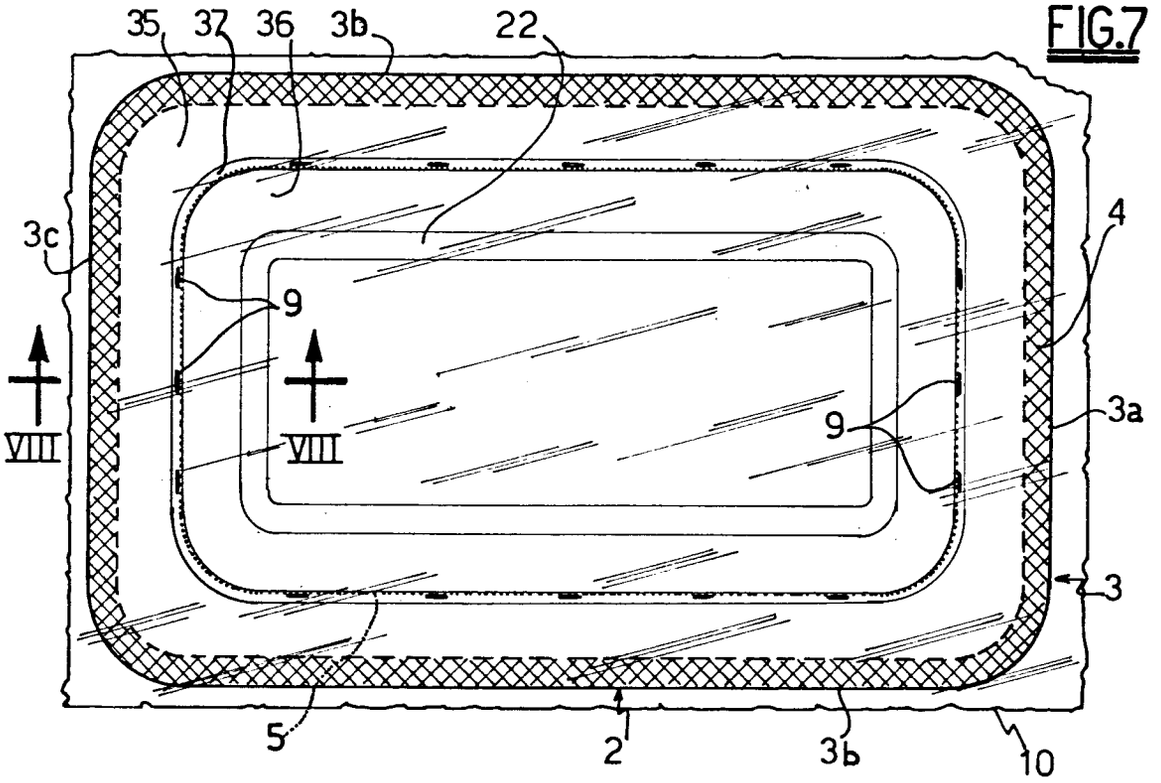


FIG.8A

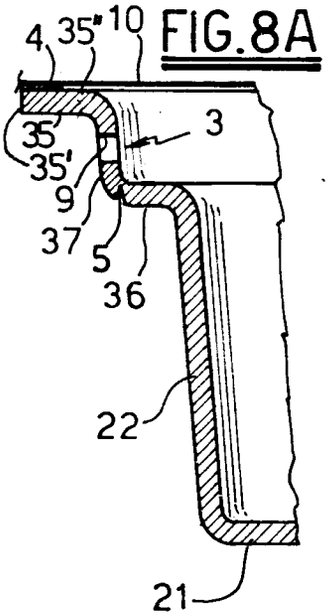


FIG.8B

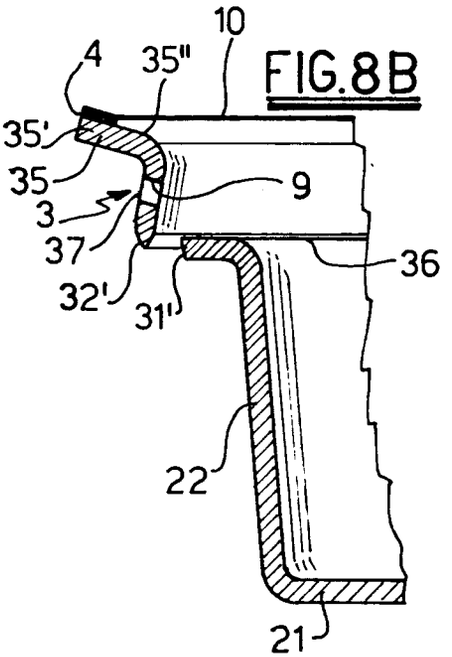
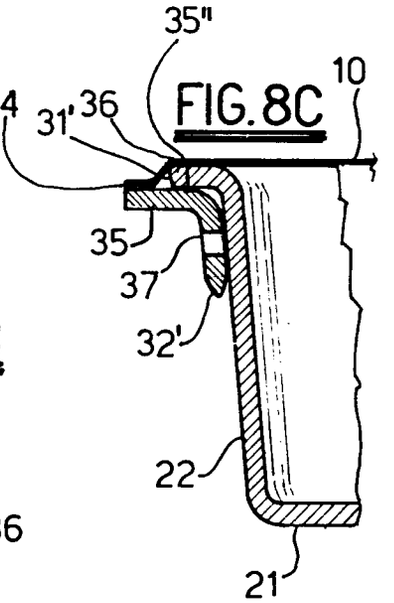


FIG.8C



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EUROPEAN SEARCH REPORT

Application Number

EP 92 20 1170

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	US-A-3 398 877 (JACOBSON) * the whole document * ---	1	B65D77/20
A	GB-A-1 128 799 (ANDERSON BROS. MFG. CO.) * the whole document * -----	1	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	02 SEPTEMBER 1992	SMITH C.A.

CATEGORY OF CITED DOCUMENTS

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