

Description

The invention relates to a box, comprising:

a container which is provided on one side with at least one outwardly forced first hinge part;
a sheet-metal lid which is provided with a corresponding number of lips which each form a second hinge part and are curved inward;
which first and second hinge parts form part of a hinge;
which lid in the closed situation of the box has an edge engaging over the rim of the container, which edge remote from the or each hinge is a first curled edge such that the free, sharp end edge of the sheet-metal lid is received in the curled edge such that contact with a user is prevented.

Such a box is known for instance from NL-A-7411771 in the name of the present applicant.

A drawback to the known box is that the lid has an edge in the zone adjoining a hinge which consists of a non-modelled sheet-metal part which, due to the small thickness of the sheet-metal lid, has a sharp end edge. It may occur that in handling the box a user injures his fingers on such a sharp edge.

It is an object of the invention to embody a box of the stated type such that it does not have the mentioned drawback.

In respect of this objective the box according to the invention has the feature that said edge has a form in the zone adjoining a hinge such as to prevent a user making contact with the free sharp end edge of the sheet-metal lid in this zone.

A specific embodiment has the feature that said edge is bent inward in said zone.

Another embodiment has the special feature that said edge in said zone is a second curled edge.

This latter variant can advantageously have the special feature that the first curled edge is formed integrally with the second curled edge.

It is noted that the latter described two variants can advantageously be manufactured such that the curled edge or all curled edge parts can be formed by a shaping tool in one simultaneous process.

Yet another embodiment has the feature that a hinge comprises a hinge pin extending through the first and the second hinge parts.

This latter embodiment has the drawback that a separate component, i.e. the hinge pin, is required to form the hinge.

In this latter context an advantageous embodiment has the special feature that the first and the second hinge parts co-act directly with each other to form a hinge.

The invention will now be elucidated with reference to the annexed drawings. Herein:

figure 1 shows a partly perspective view of a box according to the invention in a first embodiment;
figure 2 shows the cross-section II-II of figure 1;
figure 3 is a partly perspective view of a second embodiment;
figure 4 shows the cross-section IV-IV of figure 3;
figure 5 is a partly perspective view of a third embodiment;
figure 6 shows the cross-section VI-VI of figure 5;
figure 7 is a partly perspective view of the lid according to figure 1; and
figure 8 shows a view corresponding with figure 7 of a variant.

Figure 1 shows a box consisting entirely of sheet-metal, comprising a container 1 which is provided on one side with two outwardly forced first hinge parts 2, 3, a sheet-metal lid 4 which is provided with two lips 5, 6 which each form a second hinge part and are curved inward. The associated first and second hinge parts form part of a hinge.

In the closed situation of box 7 the lid 4 has an edge 9 gripping over the rim 8 of container 1, which edge remote from hinges 2, 5; 3, 6 is a first curled edge 10 such that the free, sharp end edge 11 of lid 4 is received in curled edge 10 such that contact with a user is prevented.

Said edge 9 has a form in the zones adjoining hinges 2, 5; 3, 6 such as to prevent contact by a user with the free, sharp end edge 12 of sheet-metal lid 4 in these zones. Said edge is bent inward in said zones for this purpose. These edge zones are designated 13, 14, 15.

It will be particularly apparent from figure 2 that the inward bent sharp end edge 12 has a relative position such that contact with a user is effectively prevented.

Figures 3 and 4 show a variant which corresponds by and large with the embodiment of figures 1 and 2. Box 33 according to these figures 3 and 4 has only one hinge which in principle is embodied in the same manner as hinges 2, 5; 3, 6. In this embodiment a first hinge part 14 is comparatively long and co-acts with an inwardly curved, equally long lip 15 formed on lid 16. The sharp end edges to which the invention relates are designated respectively 17 and 18. As shown particularly clearly in figure 4, this sharp end edge is bent inward in the same way as edge 12 of figures 1 and 2.

Figures 5 and 6 show a box 19 wherein sharp end edge 20 is made inaccessible to a user in a manner other than in figures 1-4. The curled edge 10, for which the end edge of the lid 21 according to the invention is formed, is described with reference to figures 1 and 2. In the case of lid 21 this curled edge extends to a position close to hinges 2, 5; 3, 6 and therebetween. The diverse curled edge parts are designated respectively 22, 23, 24. It will be apparent that in this way the sharp end edge 20 is effectively made inaccessible.

Figure 7 shows the lid 4 according to figure 1 at the stage in which lips 5 and 6 have not yet been bent to

form the hinges drawn in figure 1. It will be apparent that the longitudinal edges of the lips 5, 6, all designated 27 for the sake of convenience and extending transversely of edges 13, 14, 15, have been cut with a sharp edge and are therefore themselves sharp.

Figure 8 shows a variant in which the edges designated 27' are bent inward. A subsequent source of damage to clothing of a user or of injury is thus eliminated since a hinge formed on the basis of the structure of figure 8 no longer has any sharp end zones either.

It is noted that the boxes in question are generally provided with printing. This printing will generally contain information relating to the products stored in the box, for instance cigars, coloured chalk for children or other articles or objects.

7. Box as claimed in claim 1, **characterized in that** the longitudinal edges of the lips extending transversely of the end edge of the lid are bent inward.

Claims

1. Box, comprising:
 - a container which is provided on one side with at least one outwardly forced first hinge part;
 - a sheet-metal lid which is provided with a corresponding number of lips which each form a second hinge part and are curved inward;
 - which first and second hinge parts form part of a hinge;
 - which lid in the closed situation of the box has an edge engaging over the rim of the container,
 - which edge remote from the or each hinge is a first curled edge such that the free, sharp end edge of the sheet-metal lid is received in the curled edge such that contact with a user is prevented,
 - characterized in that**
 - said edge has a form in the zone adjoining a hinge such as to prevent a user making contact with the free, sharp end edge of the sheet-metal lid in this zone.
2. Box as claimed in claim 1, **characterized in that** said edge is bent inward in said zone.
3. Box as claimed in claim 1, **characterized in that** said edge in said zone is a second curled edge.
4. Box as claimed in claim 3, **characterized in that** the first curled edge is formed integrally with the second curled edge.
5. Box as claimed in claim 1, **characterized in that** a hinge comprises a hinge pin extending through the first and the second hinge parts.
6. Box as claimed in claim 1, **characterized in that** the first and the second hinge parts co-act directly with each other to form a hinge.

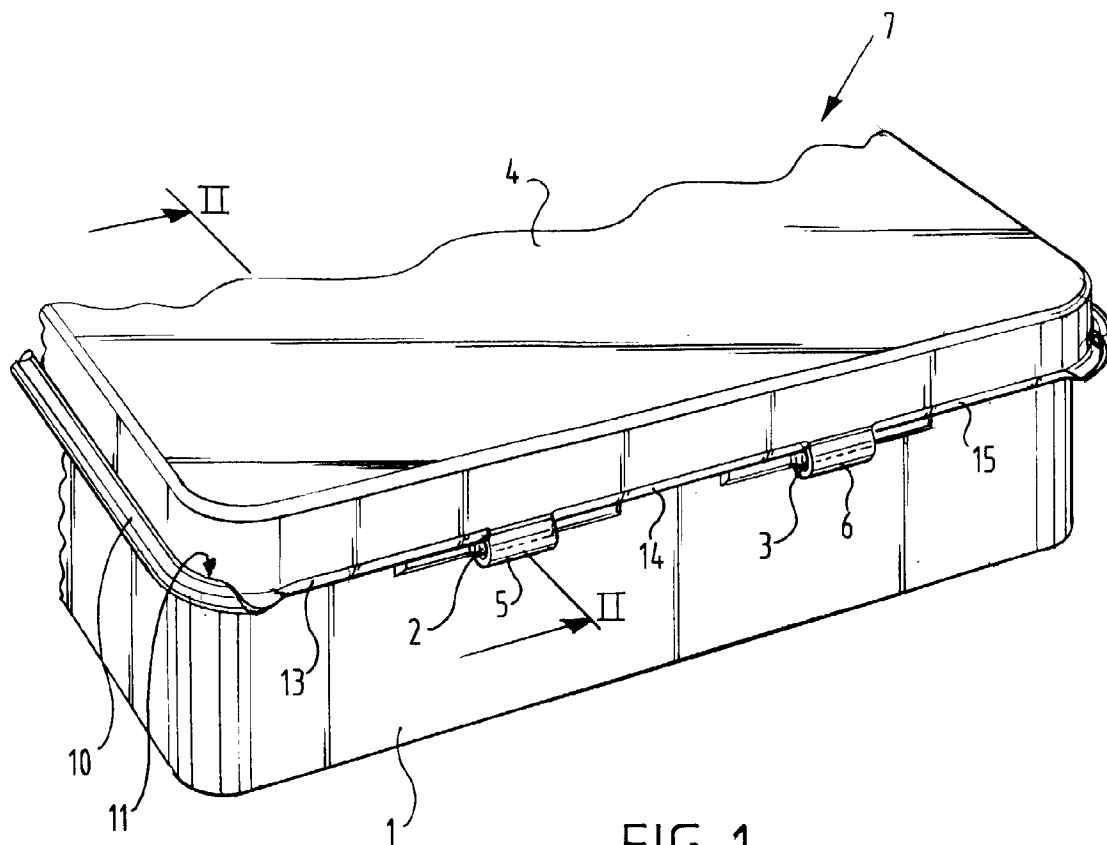


FIG. 1

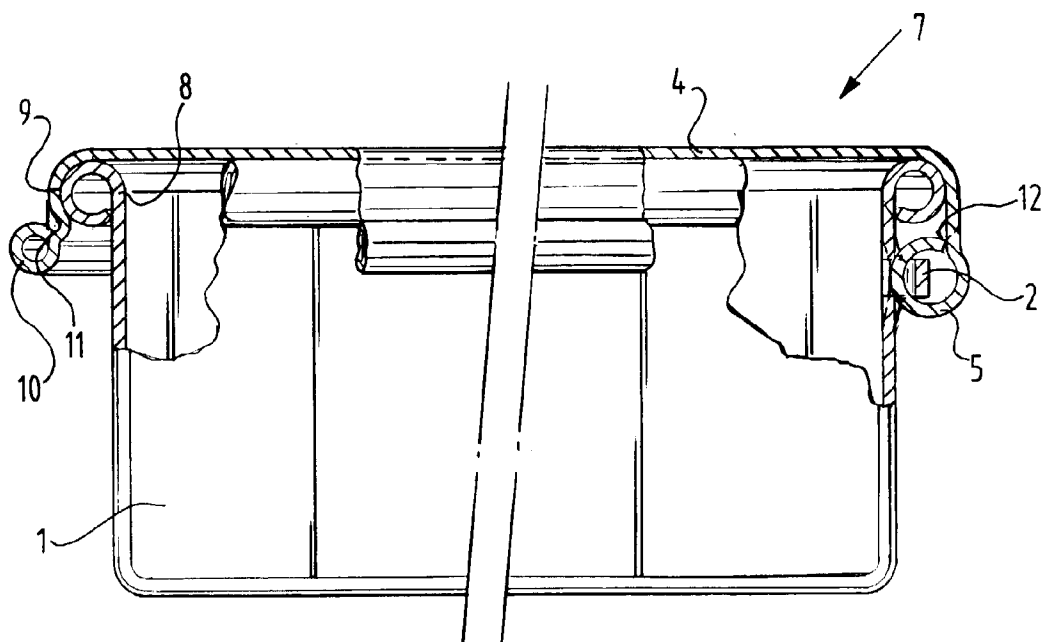


FIG. 2

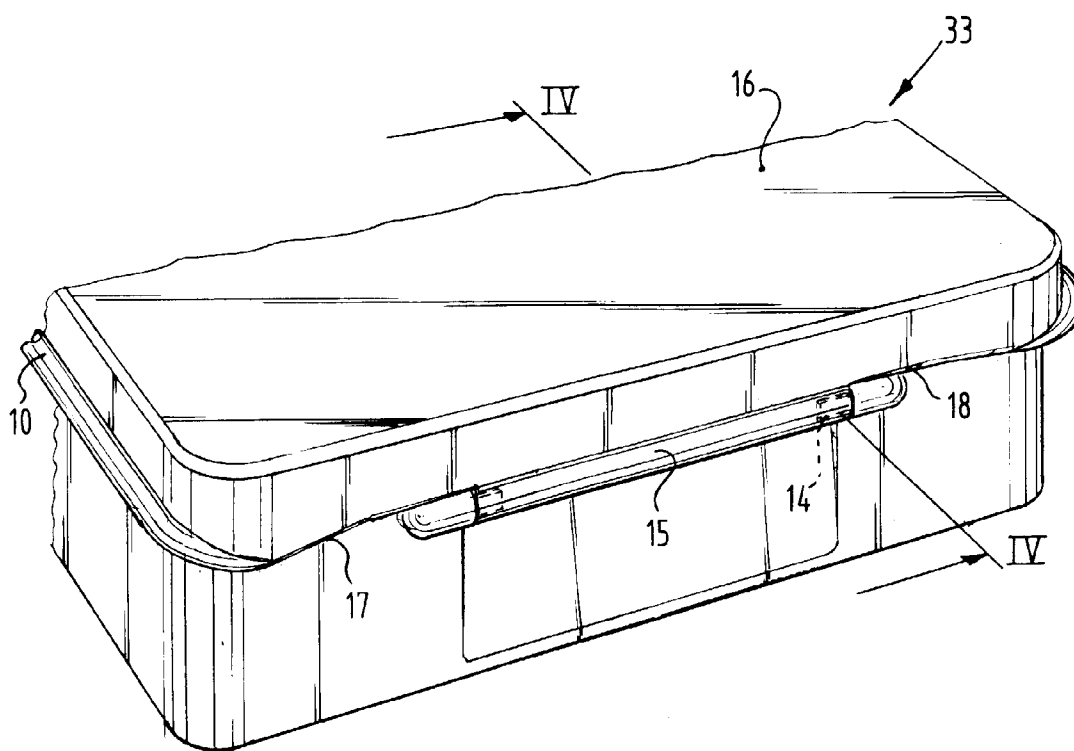


FIG. 3.

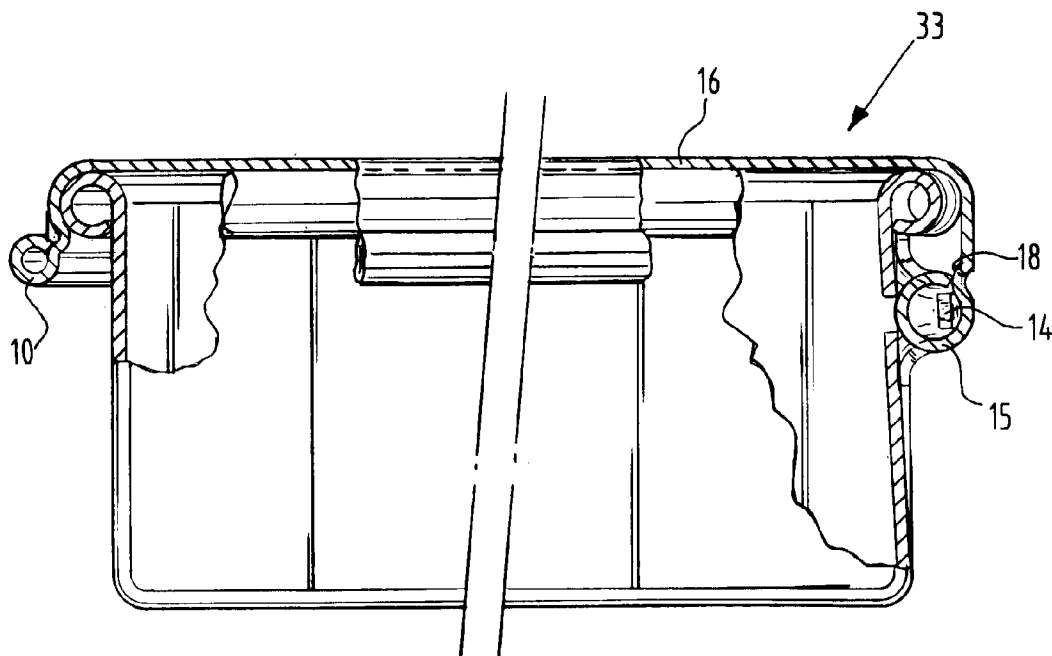


FIG. 4

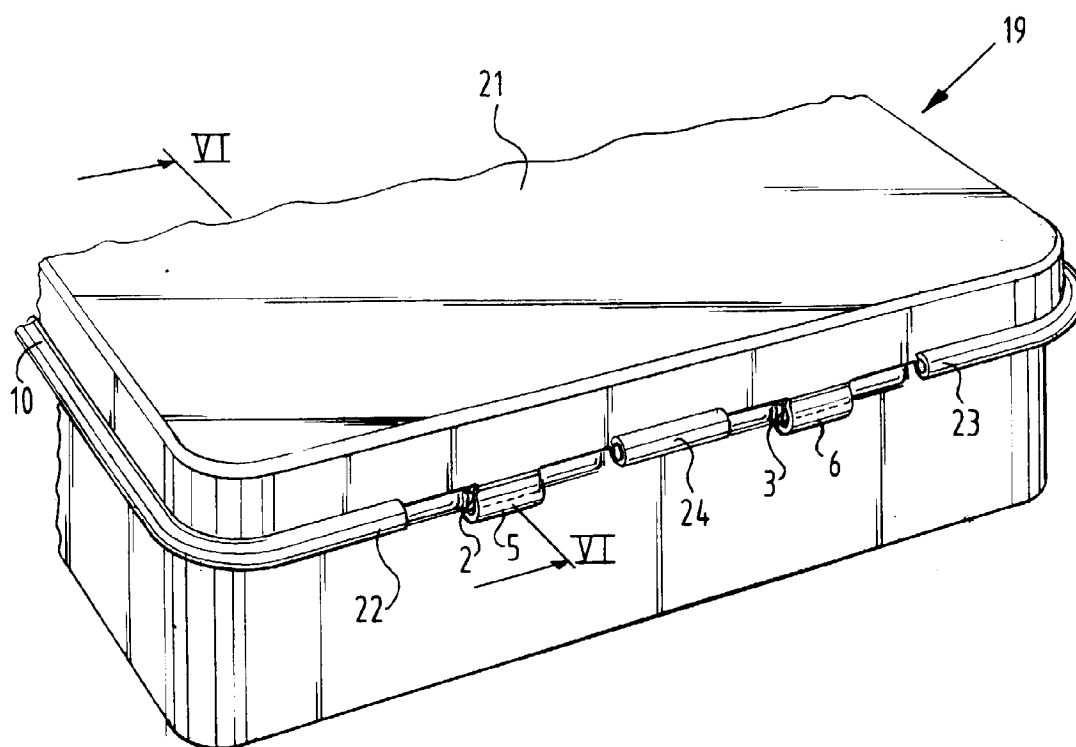


FIG. 5

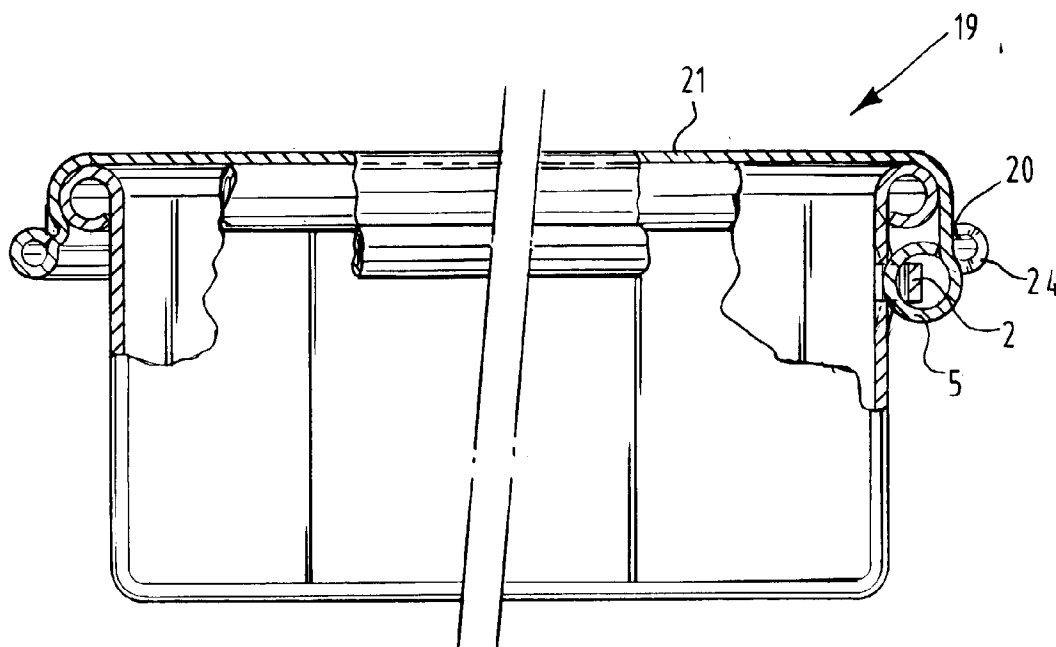


FIG. 6

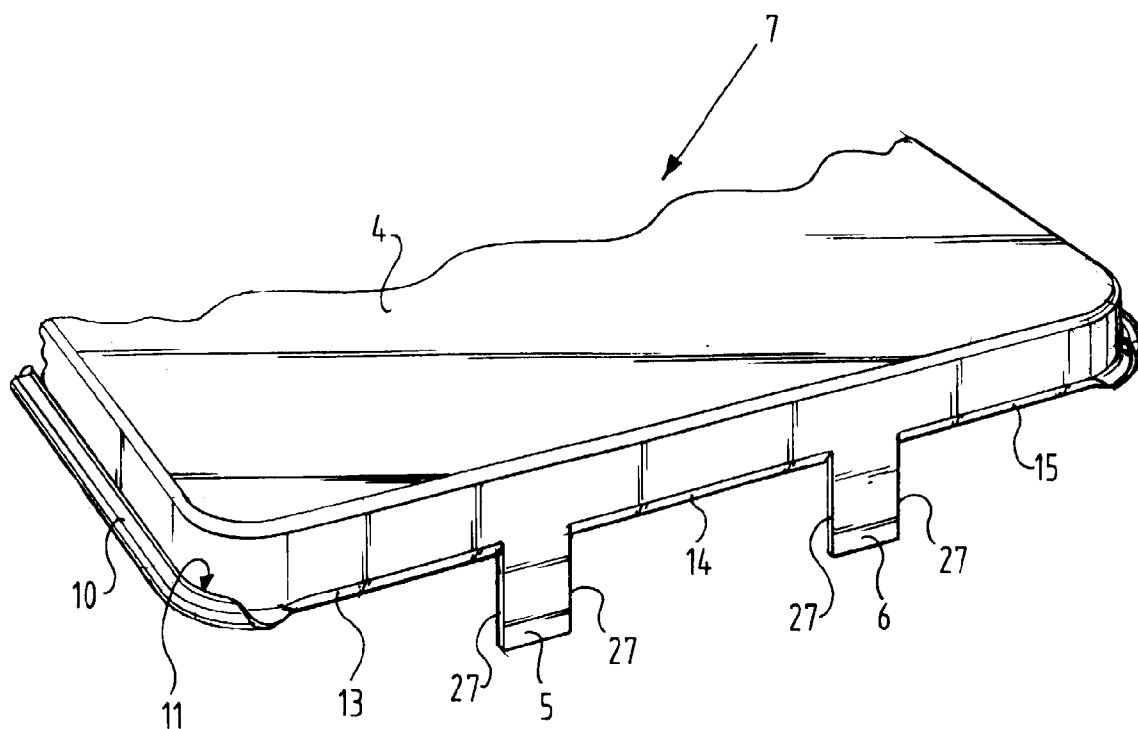


FIG. 7

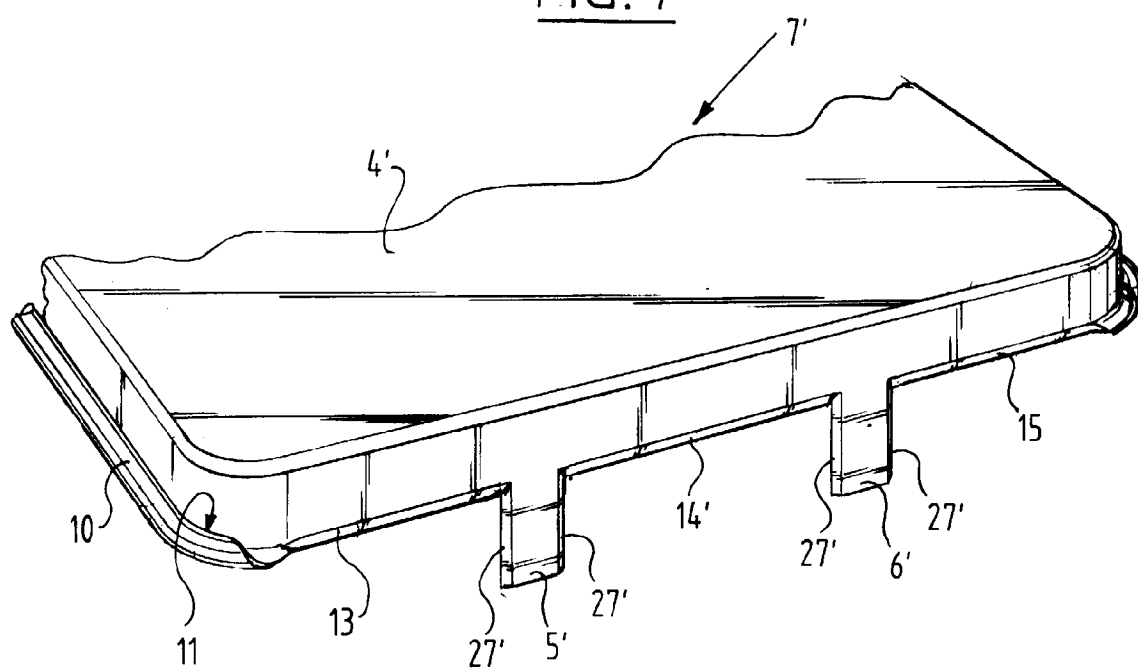


FIG. 8



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 20 3159

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.6)
X	GB 550 677 A (PATON, CALVERT AND COMP.) 13 March 1946 * page 1, line 49-84; figures 1,2 *	1-5	B65D43/16 B21D51/52
A	GB 408 334 A (PETTICAN) 3 May 1934 * page 2, line 21-56; figures 1-3 *	1,3,4,6,7	
A,D	NL 7 411 771 A (THOMASSEN & DRIJVER-VERBLIFA N.V.) 8 March 1976 * page 1-3; figures 1-6 *	1,2,6,7	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D B21D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 23 January 1998	Examiner Vollering, J
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)