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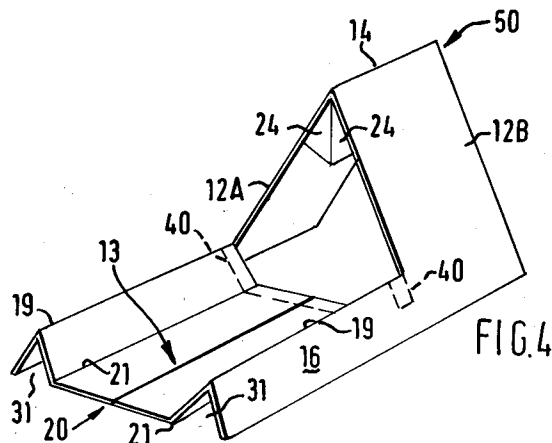
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BE DE FR GB NL(71) Applicant: **AGFA-GEVAERT naamloze
vennootschap
Septestraat 27
B-2640 Mortsel (BE)**(72) Inventor: **Cornelissen, Herman,
c/o Agfa-Gevaert N.V.
DIE 3800, Septestraat 27
B-2640 Mortsel (BE)**
Inventor: **De Keersmaecker Petrus,
c/o Agfa-Gevaert N.V.
DIE 3800, Septestraat 27
B-2640 Mortsel (BE)**(54) **A container and packing spacer therefor.**

(57) A container comprises a box, packing spacers (50) and a roll of sheet material. Each packing spacer (50) locates between the end of the roll and a side of the box. The spacer (50) is basically triangular having a first portion (12) forming the sides (12A, 12B) of the spacer and a second portion (13) forming the base (20). The first portion (12) locates between the end face of the roll and the side of the box and the second portion (13) locates underneath the roll to prevent it from rolling movement. The first portion 12 may be cut to different lengths to allow the spacer (50) to be adjusted to accommodate different width rolls in a standard length box.

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Field of Invention

This invention relates to a container and to a packing spacer for supporting elongated rolls of wound sheet material within the container and a blank therefor. The invention is particularly applicable to the transport and storage of light sensitive film sheet which may also be pressure sensitive.

Background of Invention

Rolls of light sensitive sheet material have been stored and transported as rolls of material wound onto a core and enclosed in a light tight black plastics wrapping which is then packed in a cardboard box-like container. Unfortunately, the sheet material may also be sensitive to pressure and pressure marks on the material become visible after development. Such marks may be caused by handling the roll through its wrapping causing marks after development, or by movement of the roll in its container. In order to prevent the film from moving within the container it is known to place shaped expanded polystyrene or corrugated cardboard packing pieces around the ends of the roll. Damage to the ends of the roll may be prevented by placing moulded end caps in the ends of the core on which the material is wound.

Generally the length of the box has to be matched to the width of the roll.

U.S. Patent 48 34 236 discloses a dispenser utilising a cassette of a given length with rolls of material of variable width. In this application the core of the roll is provided with extension members which engage hubs within the cassette. Different length extension members are used with different width rolls.

Such a system does not lend itself to the transport of rolls of light sensitive sheet material enclosed in black plastic bags.

Object of Invention

The present invention provides a container of given length which can include rolls of variable width, a packing spacer, and a blank therefor, and which are particularly useful for transportation of rolls of light sensitive and pressure sensitive sheet material.

Statement of Invention

According to the present invention there is provided a rectangular blank for folding into a packing spacer characterized in that the spacer is a triangular spacer and the blank has a longitudinal line to one side of which a first portion of said blank is formed into the sides of the triangular

spacer and to the other side of which a second portion of said blank is folded into the base of the triangular spacer, said first portion having a transverse central fold line extending from a transverse edge inwardly to said longitudinal line and said second portion having longitudinal edge margins which extend from said first portion and which each have longitudinally inwardly projecting tongues connected thereto by a first fold line and which have at least one further spaced fold thereon for folding the tongues to form the base of the triangular spacer.

Also according to the present invention there is provided a packing spacer for location between the end face of a roll of sheet material and a side of a box in which the roll is disposed characterized in that said spacer is a triangular spacer having a first portion forming the sides of the triangular spacer for location between the end face of the roll and the respective side of the box and a second portion off-set from the first portion and which is folded to form the base of the triangular spacer, said second portion including two side portions that each extend into an adjacent side of the spacer and which each have a tongue foldably connected thereto, the two tongues extending towards each other to form the base for locating under the roll, the side portions providing wedges to help prevent rolling movement of the roll in the box.

There is yet further provided a container of rolled sheet material comprising a box, an elongated roll of sheet material, and two packing spacers arranged one at each end of the roll to hold the roll stationary within the box, characterised in that at least one of the spacers is according to the invention, and/or is made from a blank also in accordance with the present invention.

The blank and/or spacer can be utilised to allow a standard sized box to be used for packing of rolls of different widths simply by cutting the first portion of the blank or spacer to a length to produce a spacer of the required overall length.

The use of a variable length spacer allows for boxes to be recycled with different width rolls and also allows for standardisation of boxes.

Furthermore since the preferred material for the spacers is corrugated cardboard then any waste material cut from the blanks and/or spacers is easily recyclable.

Description of Drawings

The invention will be described by way of example and with reference to the accompanying drawings in which:

Fig. 1 is a blank according to the invention,

Fig. 2 is a front elevation of a spacer formed from the blank of Fig. 1, showing a roll thereon

in dotted outline,

Fig. 3 is a side elevation of the spacer shown in Fig. 2,

Fig. 4 is an isometric view of the spacer shown in Figs 2 and 3,

Fig. 5 is a longitudinal sectional view of container according to the invention, and

Fig. 6 is a plan view of an open container.

Detailed Description

With reference to Fig. 1 of the drawings, there is shown a blank 11 for forming into a triangular packing spacer (see Fig. 4) for use in combination with a box 51 (see Fig.5) for the transport and/or storage of rolls of sheet material, and in particular light sensitive sheet material wrapped in black plastics sheet.

The blank 11 is rectangular and is divided into two portions 12, 13, along a longitudinal line L-L. The first portion 12 has a central transverse fold line 14 extending from one side edge 15 to the longitudinal line L-L. The first portion 12 is folded around the transverse fold line 14 to form two sides 12A and 12B of the triangular spacer. The second portion 13 forms the base of the triangular spacer and comprises longitudinal edge margins 16 which extend from said first portion 12 and which each have a longitudinally inwardly extending tongue 17 projecting therefrom.

The tongues 17 are each spaced from the first portion by a longitudinal slit 18 arranged on the longitudinal line L-L. Each tongue 17 is connected to its respective longitudinal edge margin 16 through a first transverse fold line 19 and each tongue has a second transverse fold line 21 thereon which is spaced from the first fold line 19 by a distance substantially equal to the distance 'd' that the first fold line 19 is spaced from its respective longitudinal end 22.

Each slit 18 extends inwardly from the first fold line 19 and allows the tongues 17 to be folded to form the base 20 of each triangular spacer with the base 20 being off-set from the sides 12A, 12B. The two tongues 17 extend towards each other to leave a gap 23 between the two tongues which has a length X of about 1/3rd of the length of the blank, and the first fold lines 19 are spaced inwardly from that respective edge by about 1/9th of the length of the blank.

A pair of triangular tabs 24 may be provided in the gap 23 with their apices meeting at the junction between the transverse central line 14 and the line L-L, and are connected to the first portion 12 along one side by a fold line along the line L-L and are separated from the adjacent tongue 18 by a transverse slit 26.

The blank 11 is preferably made from corrugated cardboard, more particularly double wall corrugated cardboard, but could be made from corrugated plastic sheet such as corrugated polypropylene.

The blank 11 is folded as shown in Figs. 2 to 4 to provide a triangular packing spacer 50 with a first portion 12 forming the sides 12A 12B of the triangle, and a second portion 13 off-set from the first portion forming the base 20 of the triangle.

With reference now also to Fig. 5 and 6, in a container according to the invention, the spacer 50 is used in combination with an elongate box 51 and an elongate roll of light sensitive sheet material 52 which will be enclosed in a black plastic covering to protect it from light and dirt.

The spacer 50 is located with its first portion 12 between the end face 53 of the roll and the side of the box 51 and with its second portion 13 extending underneath the adjacent end portion of the roll 52. The tongues 17 when folded along the transverse lines 19, 21 form a chevron shaped wedge 31 adjacent the base corners of the spacer 50 with the two tongues 17 preferably in abutment with each other lying flat at the centre of the base.

The angle of inclination of the portion between the fold lines 19 and 21 can be altered by varying the distance between the fold lines if required.

The two wedges 31 locate under the roll 52 (best seen in Fig. 2) to prevent the roll 52 from rolling around in the box.

The tabs 24 if included are folded towards each other to fill the space at the apex of the triangle to provide a larger contact area with the roll 52 to help reduce pressure marks and/or damage to the edges of the sheet on the roll.

The rolls of sheet material may be very large in the order of 500mm -1000mm in length and 120 - 140mm in diameter, and the box 51 is of a standard given length. The rolls 52 may vary in width within certain limits, and therefore the spacer 50 can be adapted to enable a standard box to be used with different width rolls merely by adjusting the transverse width 'Y' of the first portion 12 of the blank 11 or spacer 50, to the required length to locate between the end face 53 of the roll and the side of the box.

If the spacer 50 is formed from cardboard this is simply achieved by cutting to length at the time of packing the roll.

In use the spacer 50 should extend across the full width of the box 51 with the corners of the base locating in the corners of the box and should preferably have a height which will reach almost to the top of the box.

Various modifications can be made to the blank 11 and spacer 50 in order to accommodate different types of roll. For example, some rolls are

supplied with plastic protective end caps which locate in the roll core. The blank and spacer can be provided with cut outs 40, shown in chain dot in figs. 1, 3 and 4, which accommodate the end caps or flanges thereon

In yet another embodiment the apex of the spacer may have a chamfer 42 (see Fig. 3) to facilitate the introduction and positioning of the roll of sheet material between the spacers.

Claims

1. A rectangular blank (11) for folding into a packing spacer (50) characterized in that the spacer (50) is triangular and the blank (11) has a longitudinal line (L-L) to one side of which a first portion (12) of said blank is formed into the sides (12A,12B) of the triangular spacer and to the other side of which a second portion (13) of said blank is folded into the base (20) of the triangular spacer, said first portion (12) having a transverse central fold line (14) extending from a transverse edge (15) inwardly to said longitudinal line (L-L) and said second portion (13) having longitudinal edge margins (16) which extend from said first portion (12) and which each have a longitudinally inwardly projecting tongue (17) connected thereto by a first fold line (19) and which has at least one spaced fold line (21) thereon for folding the tongues (17) to form the base of the triangular spacer (50).
2. A blank as claimed in Claim 1 characterized in that each tongue (17) is spaced from said first portion (12) by a longitudinal slit (18) arranged on said one line (L-L) and extending from the first fold line (19) spaced inwardly from the respective longitudinal edge (22).
3. A blank as claimed in Claim 2, characterised in that the gap (23) between the spaced apart tongues (17) is substantially equal to about 1/3 of the length of the blank (11), and there are two transverse fold lines (19,21) for each tongue (17) spaced apart by about 1/9 of the length of the blank (11) with the first fold line (19) being located about the same distance from the respective longitudinal edge (22).
4. A blank as claimed in Claim 3, characterised in that a pair of triangular tabs (24) are located within the gap (23) and are connected along one side to said first portion (12) through fold lines arranged along said longitudinal line (L-L) with the apices of said triangular tabs (24) meeting at the junction between said longitudinal line (L-L) and the transverse central fold

line (14).

5. A parking spacer (50) for location between the end face (53) of a roll (52) of sheet material and a side of a box (51) in which the roll (52) is disposed, characterised that said spacer (50) is a triangular spacer having a first portion (12) forming the sides (12A,12B) of the triangular spacer (50) for locating between the end face (53) of the roll (52) and the respective side of the box (51) and a second portion (13) off-set from the first portion (12) and which is folded to form the base (20) of the triangular spacer (50), said second portion (13) including two side portions (16) that each extend into an adjacent side (12A,12B) of the spacer and which each have a tongue (17) foldably connected thereto, the two tongues (17) extending towards each other to form the base and locating under the roll (52), the side portions (16) providing wedges (31) to help prevent rolling movement of the roll (52) in the box (51).
6. A spacer as claimed in Claim 5, characterised in that the tongues (17) are substantially in abutment with each other.
7. A spacer as claimed in Claim 5 or Claim 6, characterised in that each tongue (17) is connected to the respective side portion (16) through a first fold line (19), and has at least a second fold line (21) spaced from the first fold line (19) allowing the tongue (17) to be folded to form an inclined portion adjacent the side portion (16) and a flat portion for location against a portion of the floor of the box (51).
8. A spacer as claimed in any one of Claims 5 to 7, characterised in that a pair of triangular tabs (24) are located adjacent the apex between the sides (12A,12B), the tabs (24) being foldably connected along one side to a respective side (12A or 12B) and abutting each other along another of their sides.
9. A container of rolled sheet material comprising a box (51), an elongated roll (52) of sheet material and two packing spacers (50) arranged one at each end of the roll to prevent the relative movement of the roll within the box (51), characterised in that at least one of the spacers (50) is a spacer according to any one of Claims 5 to 7, or is a spacer (50) formed from a blank according to any one of claims 1 to 4.
10. A container as claimed in Claim 9, characterised in that the triangular spacer (50) has a

height such that the apex (14) of the spacer is substantially at the same height as the box and the base corners of the spacer are located in the bottom corners of the box.

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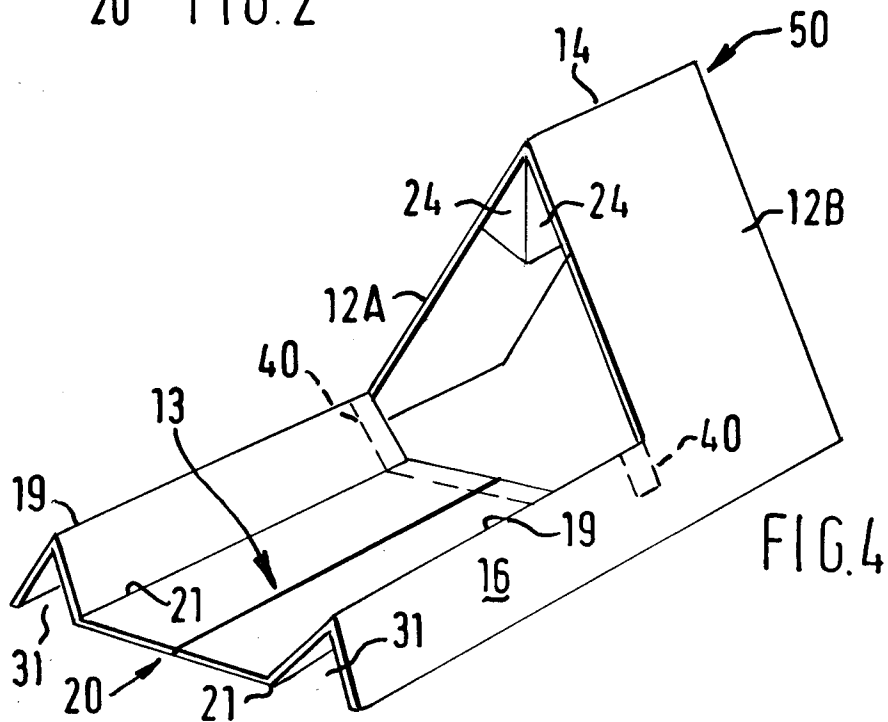
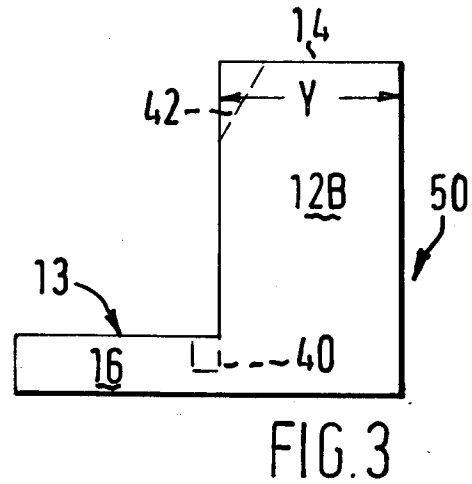
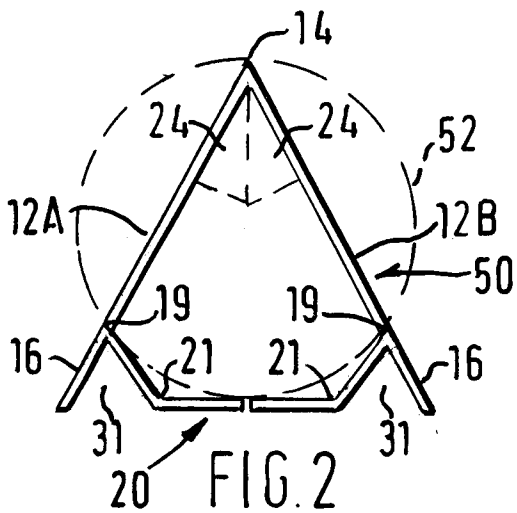
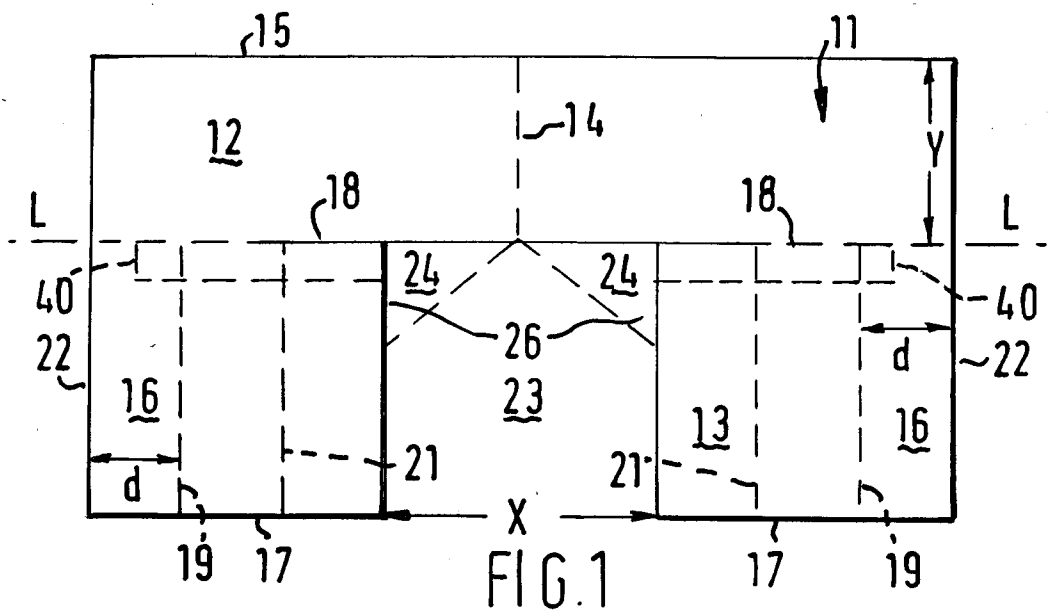
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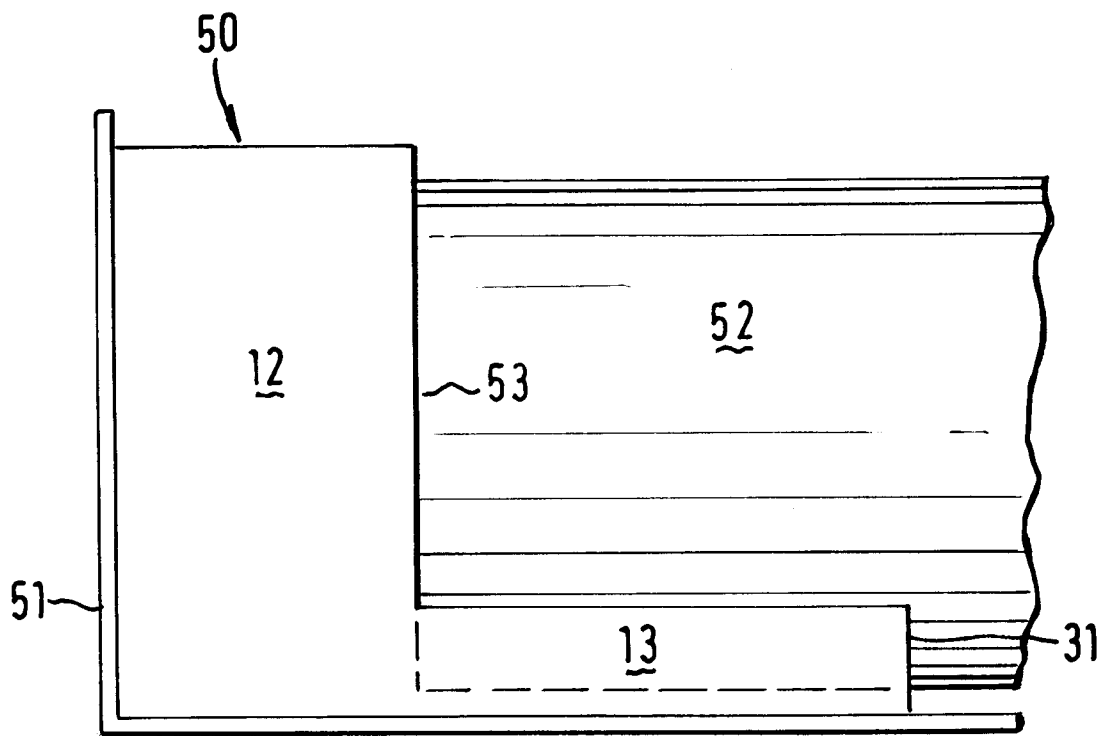


FIG. 5

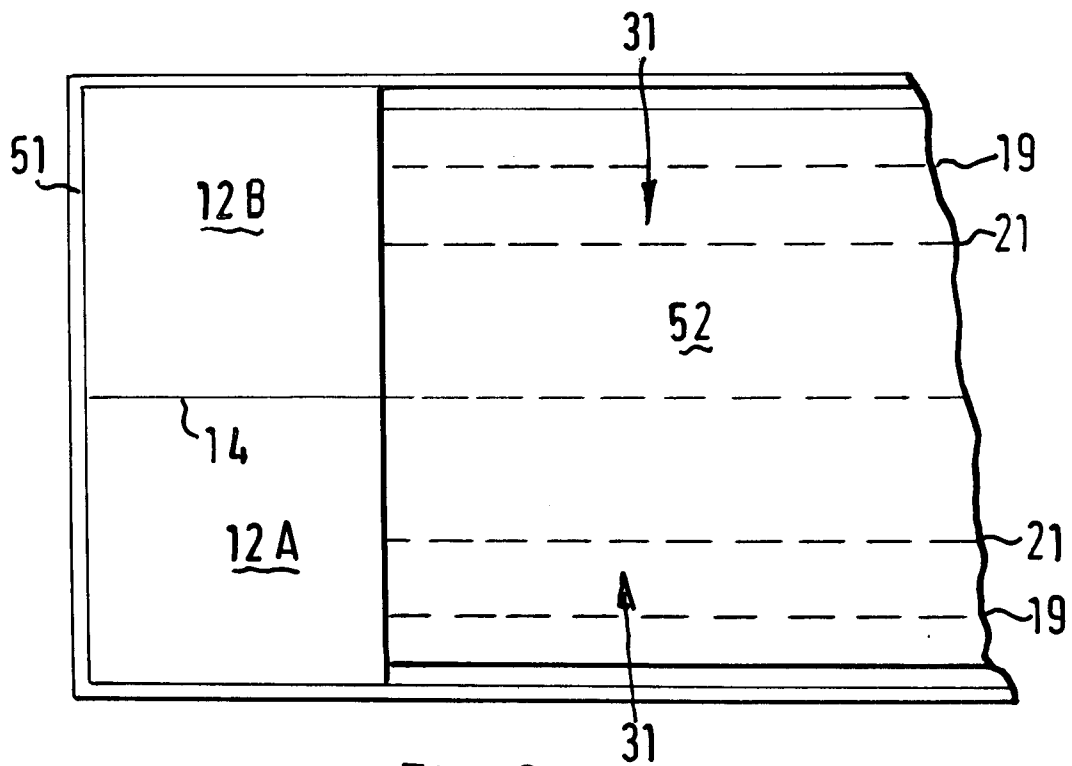


FIG. 6



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EUROPEAN SEARCH REPORT

Application Number
EP 94 20 0638

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)
A	US-A-3 363 748 (HOOD) * the whole document * ---	1,5-7,9	B65D5/50
A	US-A-3 082 864 (SILVER) * figures * ---	1,5-7,9	
A	GB-A-2 081 225 (SEYFERT WELLPAPPE GMBH & CO.) * abstract; figures * ---	1,5,9	
A	FR-A-1 049 050 (LOMBARD) * figure 3 * ---	1,5	
A	EP-A-0 499 577 (DIVIDELLA AG) * abstract; figures * ---	1,5	
A	DE-U-93 05 406 (AXM GMBH) * the whole document * -----	1,5,9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D G03C
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 2 August 1994	Examiner Gino, C
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			