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(54) A nestable container

(57) A nestable container including means to carry a card on one wall, the carrying means comprising:

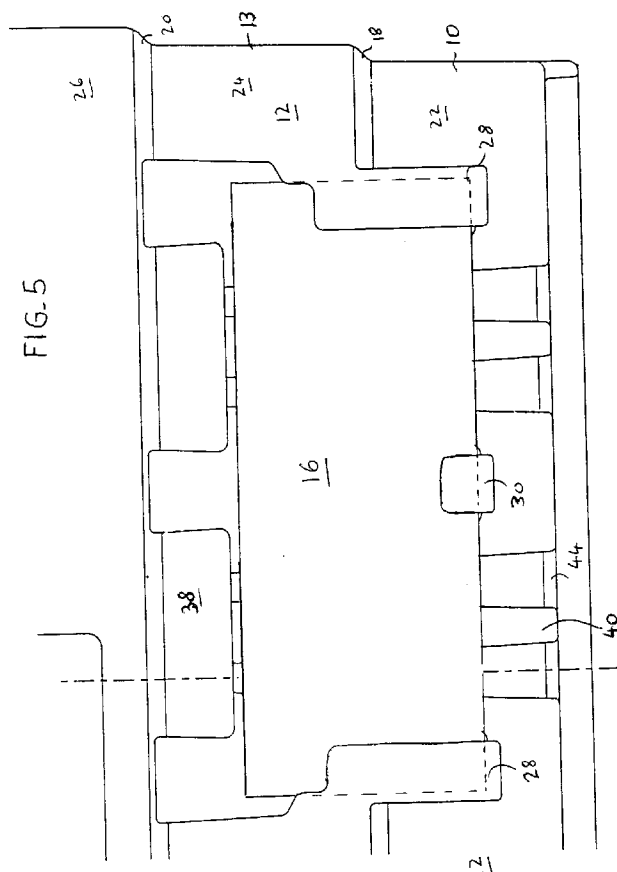
at least one lower flange (30) to support the lower edge of a card (16) and a recess above the or each lower flange to receive the or each lower flange of an identical container nested in the first container;

at least one side flange (28) to support each side

edge of a card and a recess above each side flange to receive each side flange of an identical container nested in the first container; and,

an element to support the back of the card which interleaves with a support element of an identical container nested in the first container;

at least one of the said flanges including a stop to prevent outwards movement of a card.



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Description

The invention relates to a nestable container and particularly to a nestable container including means to carry a card on one side wall.

A known nestable container which includes means to carry a card in one side wall nests to 50% of its depth. The means to carry a card is defined in the lower half of the side wall so that it does not extend to the nesting height of the container. The container is moulded from plastics material. The carrying means is formed by a plurality of flanges extending outwardly from the wall of the container to retain the card and a thinned section of the wall to support the back of the card.

As the part of the container which supports the back of the card is thinned, it tends to cool more quickly than the remainder of the container and therefore shrinks less than the adjacent parts of the wall of the container which, due to their larger thickness cool more slowly and therefore shrink more thus causing the thinner section to bow. This bowing of part of the wall is unsightly and may lead to the card not being retained adequately. It also represents a point of weakness.

According to the invention there is provided a nestable container including means to carry a card on one side wall, the carrying means comprising:

at least one lower flange to support the lower edge of a card and a recess above the or each lower flange to receive the or each lower flange of an identical container nested in the first container;
at least one side flange to support each side edge of a card and a recess above each side flange to receive each side flange of an identical container nested in the first container; and,
an element to support the back of the card which interleaves with a support element of an identical container nested in the first container;
at least one of the said flanges including a stop to prevent outwards movement of a card.

By means of the invention, a nestable container can be provided in which the card carrying means extends over the nesting height of the container, while the parts of the carrying means can be made to any desired thickness, as they will interleave with one another and so their thickness is not restricted. Indeed, preferably the carrying means does extend over the nesting height of the container.

Conveniently, the parts of the carrying means may substantially all be of the same uniform thickness. Preferably, the parts of the carrying means are of the same thickness as the thickness of the side wall of the container on which it is provided. The carrying means thus does not represent a weakness in the container as the thickness of the carrying means will be as great as the thickness of the adjacent side wall. Furthermore, where the container is formed from plastics material, the carrying means will cool at the same rate as the adjacent

side wall and therefore no bowing will take place.

At least one flange may be provided which constitutes both a lower flange and a side flange.

The or at least one lower flange may be provided centrally of the carrying means.

The support element preferably defines at least one upright arm and an upright recess below the or each upright arm to receive the or each upright arm of an identical container nested in the first container, the or each recess intersecting the base of the first container. Preferably, a plurality of arms and recesses is provided. The or each arm is preferably connected to the means defining the recess therebelow.

In this case, the back of a card is supported over its entire height.

Preferably, the container is arranged to be produced in line of draw. This greatly reduces the expense in producing the container, as no moving blocks are required in the tool to form the sides or ends of the container; only "core" and "cavity" parts of a tool are required. The prior known container described cannot be produced in line of draw. Preferably, no part of the carrying means overlaps any other part thereof.

A lead-in surface to the carrying means is preferably provided.

An embodiment of the invention will now be described by way of example and with reference to the accompanying drawings, in which:

Fig. 1 is a perspective detail view of the carrying means of the container of the embodiment of the invention;

Fig. 2 is a front elevation of the carrying means of the container of Fig. 1;

Fig. 3 is an elevation in cross-section at line III-III in Fig. 2;

Fig. 4 is the view of Fig. 1 with a second identical container nested within the first container; and,

Fig. 5 is the view of Fig. 2 showing a card being held by the carrying means.

A container 10 includes a side wall 12 in which is defined carrying means 14 for carrying a card 16.

The side walls 12, 13 of the container 10 are stepped outwardly and include two shoulders 18, 20 separating substantially vertical sections 22, 24, 26 of the walls 12, 13.

The carrying means 14 defines a notional rectangular card receiving region which is seen occupied by a card 16 in Fig. 5. The region is substantially symmetrical about the lower step 18 in the side wall 12. Lower corner flanges 28 are provided to receive the lower corners of the card 16. Each lower corner flange 28 extends outwardly from the lower section 22 of the side wall 12 over a distance equivalent to the height of the step 18 and extends upwardly to just about the height of the step 18 where it is flush with and forms a continuation of the mid-

dle section 24 of the wall 12. Above each rectangular flange 28 is provided an aperture in the middle section 24 which extends upwards to intersect the upper step 20. The aperture also extends behind each lower corner flange 28.

Centrally of the card receiving region is provided a lower flange 30 which extends outwardly from the lower section 22 of the wall 12 and upwardly so as to support the lower edge of a card 16 and act as a stop for outwards movement. The lower flange 30 does not extend upwardly as far as the lower step 18. An aperture is provided in the side wall 12 behind the flange 30 and above it to the level of the upper step 20. Between each corner flange 28 and the lower flange 30 is provided a support element 32. Each support element 32 comprises a central portion 34 which is continuous at the height of the first step 18 between the aperture above the lower flange 30 and the aperture behind the respective corner flange 28. From this central portion 34 extend upwardly two arms 36. The central portion 34 is not stepped and the arms 36 are co-planar with the lower section 22 of the wall 12 and therefore set back from the plane of the middle section 24 and the flanges 28,30. The arms 36 are connected to a portion 38 of the middle section 24 of the side wall 12. The edge of the portion 38 is tapered inwards to meet the arms 36 to provide a lead in surface 39 for a card 16 entering the carrying means 14. Below the central portion 34 of the support element 32 are provided three arms 40. The lower arms 40 meet the lower section 22 of the side wall 12. Between the arms 40 are defined two recesses 42 which lie directly beneath the arms 36. The recesses 42 extend downwardly from the card receiving region through the lower section 22 to intersect the base 44 of the container 10.

The container 10 may be moulded from plastics material.

In use, a card 16 is slid down the lead in surface 39 and behind the corner flanges 28 to abut the root of the lower flange 30. The card 16 is retained from falling outwards by the flanges 28,30 and the back of the card is supported by the support elements 32. If it is desired to nest the containers, the card 16 is removed, which may be achieved by inverting the container 10 so that the card 16 slides up the lead in surface 39 and falls out of the carrying means 14, and the containers are nested together. As the containers are nested, the flanges 28,30 of one container will be received in the apertures above the flanges 28,30 in the other container, while the arms 36 will be received in the apertures 42 defined between the arms 40 of the support element 32 of the other container.

All parts of the carrying means 14 are of the same thickness except for the lead in surface 39 and this thickness is the same thickness as the side wall of the container. Thus, there is no bowing of the carrying means 14 on shrinkage of the container during cooling after plastics moulding.

As no part of the carrying means overlaps any other

part thereof and as the surfaces of the carrying means are in only two distinct planes, it can be seen that the container 10 together with the carrying means 14 can be made in line of draw, if required, such that only "core" and "cavity" halves of a tool are required for moulding of the container.

Claims

1. A nestable container including means to carry a card on one wall, the carrying means comprising:

at least one lower flange to support the lower edge of a card and a recess above the or each lower flange to receive the or each lower flange of an identical container nested in the first container;

at least one side flange to support each side edge of a card and a recess above each side flange to receive each side flange of an identical container nested in the first container; and, an element to support the back of the card which interleaves with a support element of an identical container nested in the first container; at least one of the said flanges including a stop to prevent outwards movement of a card.

2. A container as claimed in claim 1, wherein the carrying means extends over the nesting height of the container.
3. A container as claimed in claim 1 or claim 2, wherein the parts of the carrying means are substantially all of the same uniform thickness.
4. A container as claimed in claim 3, wherein the parts of the carrying means are of the same thickness as the thickness of the side wall of the container on which it is provided.
5. A container as claimed in any preceding claim, wherein at least one flange is provided which constitutes both a lower flange and a side flange.
6. A container as claimed in any preceding claim, wherein the or at least one lower flange is provided centrally of the carrying means.
7. A container as claimed in any preceding claim, wherein the support element defines at least one upright arm and an upright recess below the or each upright arm to receive the or each upright arm of an identical container nested in the first container, the or each recess intersecting the base of the first container.
8. A container as claimed in claim 7, wherein a plurality

of arms and recesses is provided.

9. A container as claimed in claim 7 or claim 8, wherein the or each arm is connected to the means defining the recess therebelow. 5
10. A container as claimed in any preceding claim, wherein the container is arranged to be produced in line of draw. 10
11. A container as claimed in any preceding claim, wherein no part of the carrying means overlaps any other part thereof.
12. A container as claimed in any preceding claim, wherein a lead-in surface to the carrying means is provided. 15
13. A nestable container including means to carry a card on one wall, the container being substantially as described herein with reference to the accompanying drawings. 20

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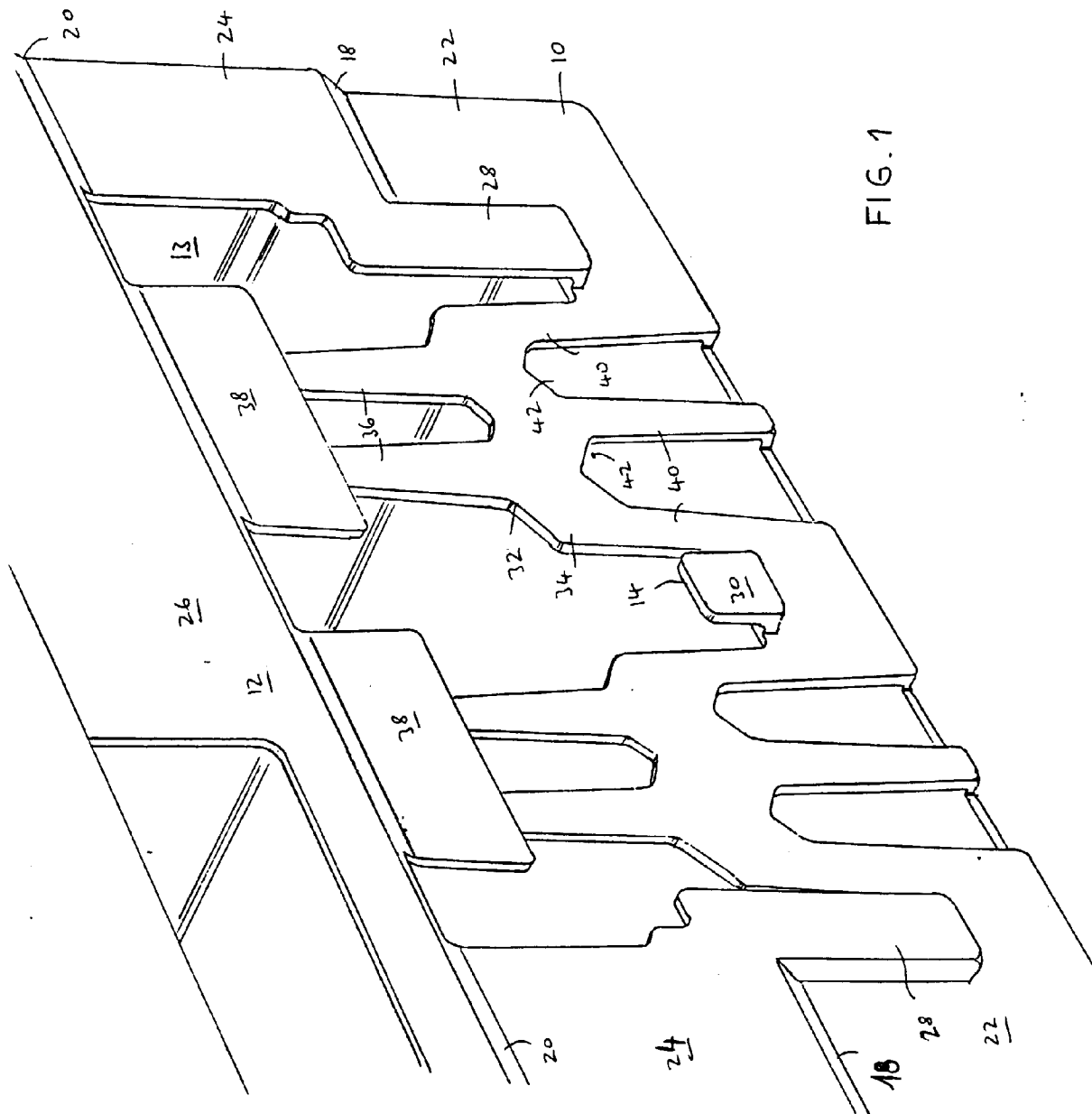


FIG. 1

FIG.3

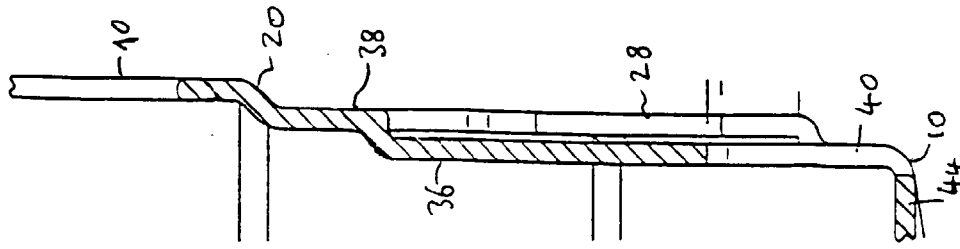
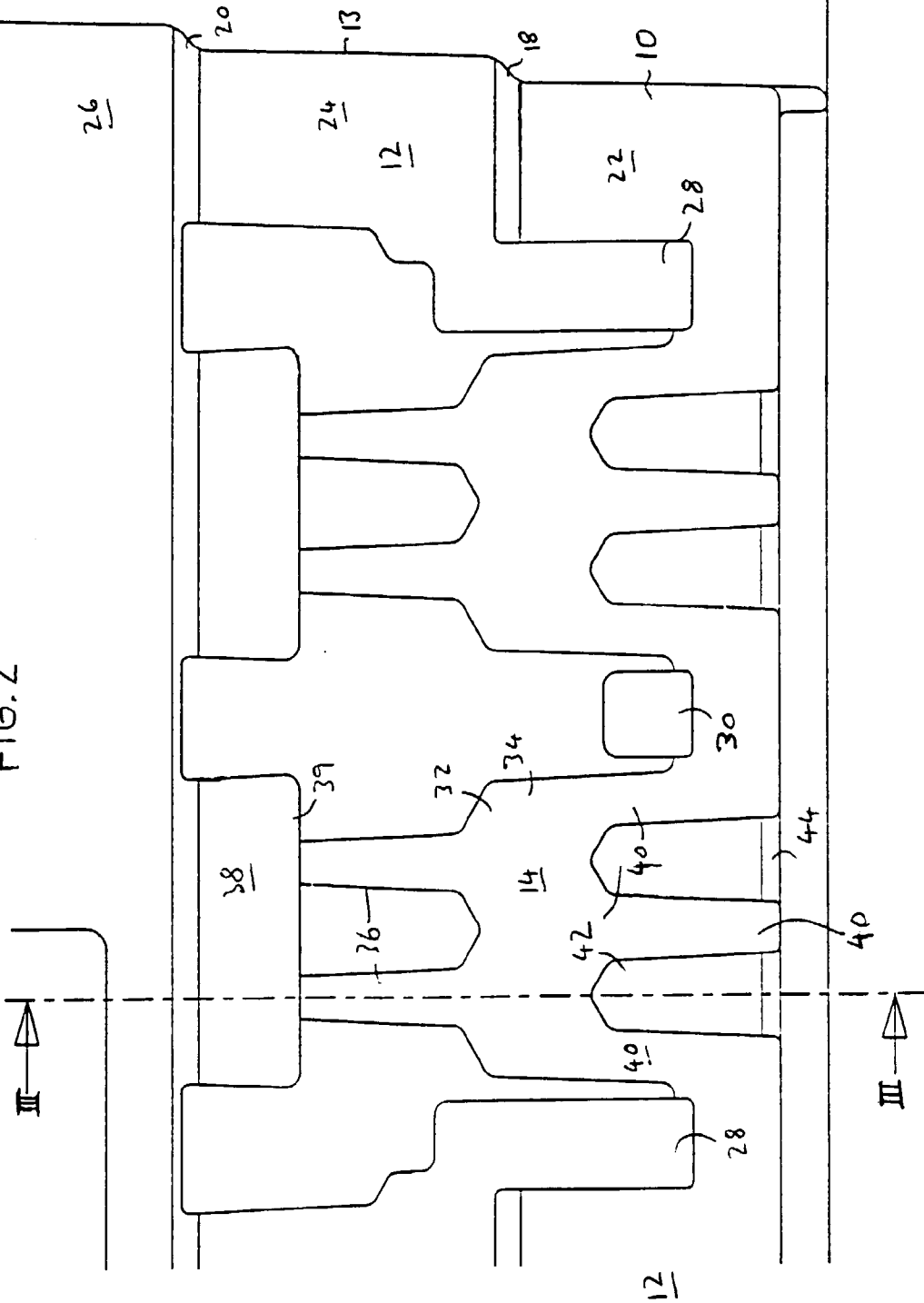


FIG.2



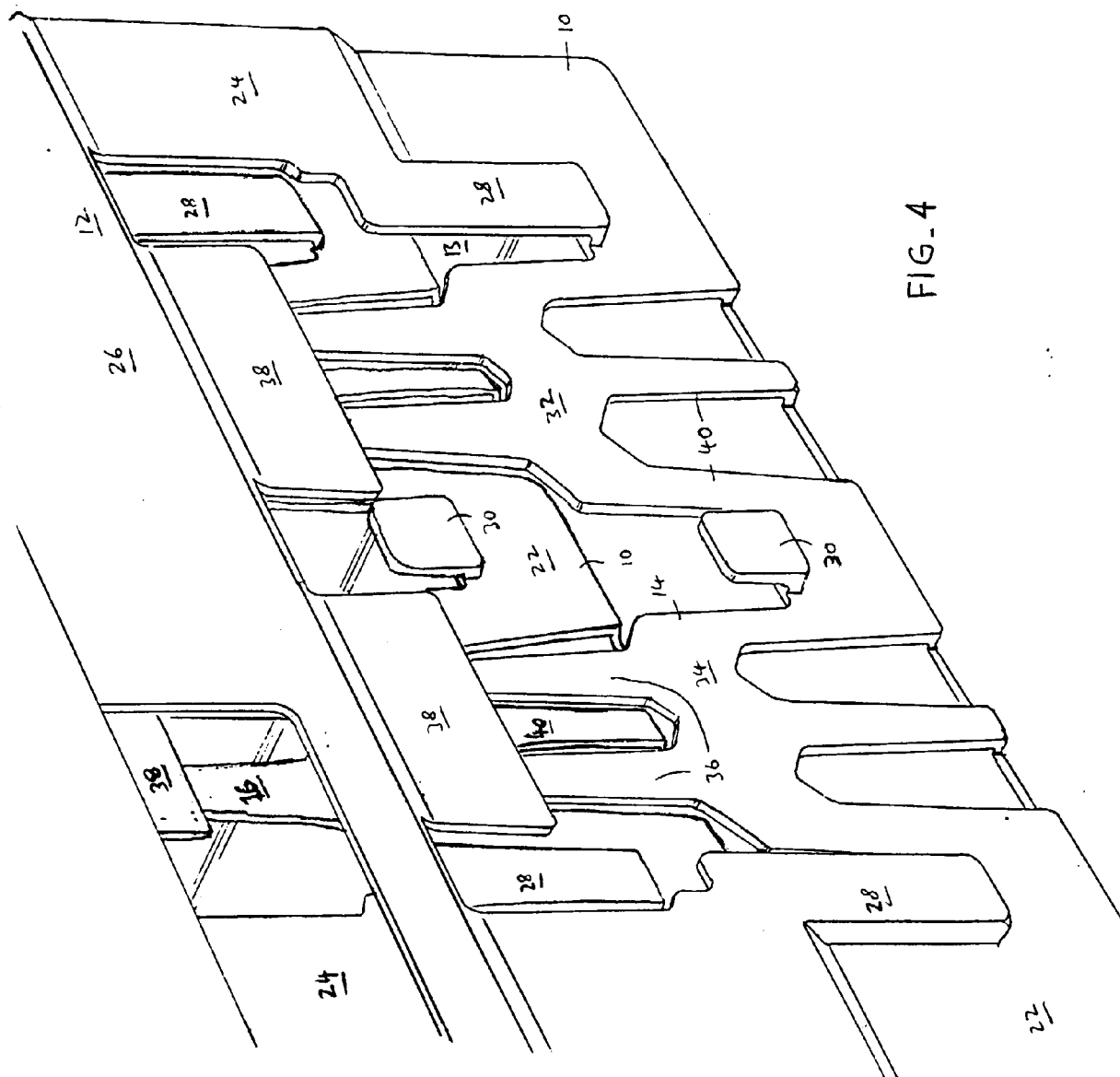
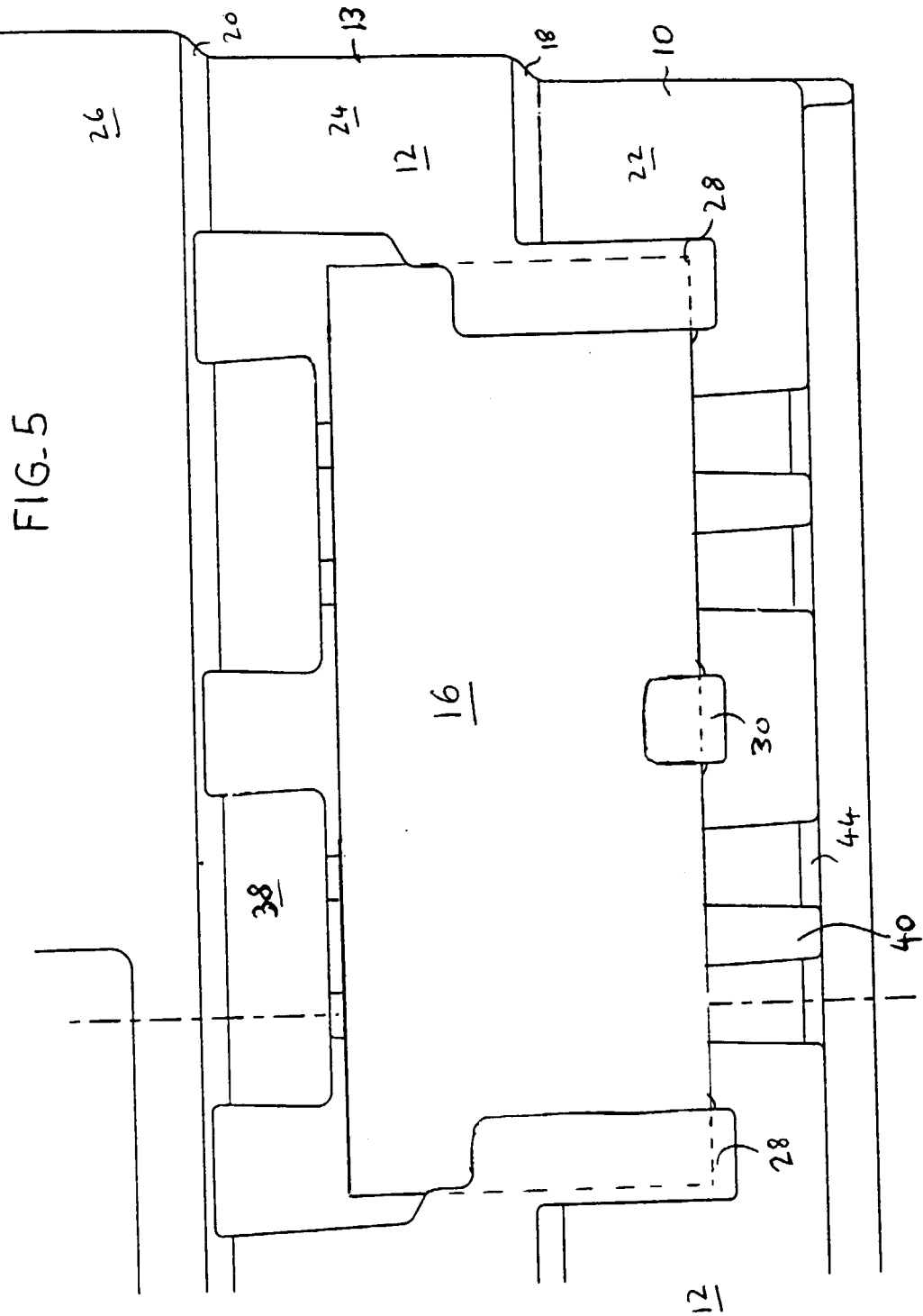


FIG-4





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EUROPEAN SEARCH REPORT

Application Number
EP 95 40 2558

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	EP-A-0 027 095 (ALLIBERT SA) 15 April 1981 * the whole document *	1	B65D21/02
A	EP-A-0 115 439 (REHRIG HOUSTON) 8 August 1984 * page 7, line 16 - line 19; figure 1 *	1	
A	DE-U-91 15 448 (DELBROUCK) 13 February 1992 * page 7, line 3 - page 10, line 1; figures 1,2 *	1	
			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
The present search report has been drawn up for all claims			
Place of search BERLIN		Date of completion of the search 26 February 1996	Examiner Spettel, J
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 I : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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