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(54) Wrap around article carrier with variable height end panels.

(57) An article carrier of the wrap-around type having a top panel (20), bottom panels (12,28) and a pair of spaced side panels (16,22) interconnected so as to form a tubular structure in which articles are accommodated. Each open end of the carrier is spanned by end panel means (C1, C2) each end panel means being hinged to respective ones of the side panels of the carrier so that portions (58, 66:60, 68) of the end panel means are folded adjacent said side panels internally of the carrier. The fold lines (44, 46) by which the end panel means are hinged to the carrier side panels extend downwardly and outwardly relative to the top panel towards the bottom panels of the carton.

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WRAP AROUND ARTICLE CARRIER WITH VARIABLE HEIGHT END PANELS

This invention relates to an article carrier of the wrap-around type which accommodates a plurality of similar primary container such as bottles or cans. The article carrier includes end panels for concealing coded information present on the individual articles at each end of the carrier so that the code carried by a single article is not read or registered when the code for the article carrier itself is required.

US Patent No 3 747 835 discloses a wrap-around article carrier which has end panels which serve as a secondary means of retaining the articles in the package. In the present invention the end panels are not intended to serve as retention means and although a similar panel arrangement results, it is of the essence of the present invention that certain fold lines by which the end panels are hinged to adjacent parts of the carrier can be set at different angles to vary the height at which the end panels span the ends of the article carrier.

One aspect of the present invention provides an article carrier of the wrap-around type having a top panel, bottom panel means and a pair of spaced side panels interconnected so as to form a tubular structure in which articles are accommodated wherein each open end of the carrier is spanned by end panel means each end panel means being hinged to respective ones of the side panels of the carrier so that portions of the end panel means are folded adjacent said side panels internally of the carrier and wherein the fold lines by which the end panel means are hinged to the carrier side panels extend downwardly and outwardly relative to the carton top wall towards said bottom panel means.

Another aspect of the present invention provides an elongate blank for forming a wrap-around article carrier which blank has a set of primary panels comprising, in series, a first base panel, a first side wall panel, a top panel, a second side wall panel and a second base panel hinged one to the next and wherein end panel means extend along opposite edges of the blank, each end panel means having a longitudinal edge which lies beyond that of the carton base panels and is connected to said primary panels only at each of its opposite ends, said connection being a fold line in a respective one of said side wall panels said fold line extending obliquely relative to the longitudinal axis of the blank.

Embodiments of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:-

FIGURE 1 is a plan view of a first paperboard blank for forming an article carrier according to the invention;

FIGURE 2 is a plan view of a second paperboard blank for forming another article carrier according to the invention;

FIGURE 3 is a plan view of a third paperboard blank for forming yet another article carrier according to the invention; and

FIGURE 4 is a perspective view from above and one end of an article carrier formed from the blank illustrated in Figure 1.

Referring first to Figures 1 and 4 of the drawings, in Figure 1 there is shown an elongate blank 10 formed from paperboard or similar foldable sheet material and which comprises, in series, a first base panel 12, a first side wall panel 14 (comprising a lower side wall panel 16 and upper side wall panel 18), a top panel 20, a second side wall panel 22 (comprising second upper side wall panel 24 and second lower side wall panel 26) and a second base panel 28 hinged one to the next along transverse fold lines 30-40.

The base panel 12 is formed with a series of male locking tabs "t" which are adapted to be inserted through locking apertures formed in base panel 28 and which are defined by retaining tabs "R" when panels 28 and 12 are brought into overlapping relationship as shown in Figure 4. Each of the panels 12 and 28 have a series of deltoid tightening apertures "a" which, in use, are engaged by a locking mechanism of a packaging machine which draws the blank tight around the articles to be packaged and brings the base panels into the correct registry for locking to be accomplished. These features of wrap-around article carriers are well known in the art.

At the top of the carton and struck from first upper side wall panel 18 and second upper side wall panel 24 are article retaining apertures "r" arranged in two rows and each of which is adapted to receive a neck portion of a bottle as shown in Figure 4 so as to assist in the retention of the bottles within the package.

Blank 10 is also provided with end panel constructions C1 and C2 respectively. Both end panel constructions are similar and end panel construction C2 is given like reference numerals to that of end panel construction C1 with the addition of suffix "'".

Referring to end panel construction C1, the panel comprises an elongate strip of paperboard material which extends longitudinally at the side edge of the blank and is separated therefrom by an elongate cut line 42 which defines the longitudinal edge of the top wall 20, both the upper side wall panels 18 and 24 and parts of the longitudinal

edges of the lower side wall panels 16 and 22.

At one of its ends, the end panel construction is connected to the lower side wall panel 16 by means of a fold line 44 and, likewise at its opposite end, the end panel construction C1 is connected to lower side wall panel 26 by a fold line 46. Fold lines 44 and 46 are therefore the only locations at which the end panel construction C1 is connected to remaining parts of the carton blank.

The panel construction itself comprises a main end portion 48 which is adapted to extend externally substantially across the open end of the carton as shown in Figure 4. The main portion is hinged to two side portions 50 and 52 by means of transverse fold lines 54 and 56 respectively, such arrangement allowing the external part of the end panel construction to more closely follow the contours of the endmost bottles in the package. Internal portions 58 and 60 of the end panel construction are hinged to panel portions 50 and 52 along transverse fold lines 62 and 64 respectively and tuck panels 66 and 68 provide the endmost portions of the end panel construction and are hinged to the internal panels 58 and 60 by means of fold lines 70 and 72 respectively. End panel construction C2 is similar.

The carton accommodates a group of six bottles arranged in two rows of three bottles each. As shown in Figure 4 when the carton is formed the end panel construction is erected so that it spans the space between the carton side walls and has portions comprising panels 58 and 66 and 60 and 68 disposed in folded face to face relationship adjacent respective side walls internally of the carton. In this arrangement, it will be seen that the fold lines 44 and 46 which connect end portions 66 and 68 to the adjacent side walls 16 and 26 are disposed obliquely so that as seen in Figure 4, those fold lines extend outwardly and downwardly with respect to the top wall of the carton towards the base panels of the carton.

It will be seen by reference to Figure 1 that the fold lines 44 and 46 are both oblique with respect to the longitudinal axis of the carton blank. The innermost extremity of each fold line lies in a vertical plane passing through the blank which is inward of a parallel vertical plane containing the adjacent end edge of the top panel (i.e. the inner edge of the end panel construction C1 itself). Each of fold lines 44 and 46 terminates at a parallel vertical plane which contains the longitudinal edges of each of the base panels, such location being inwardly of a like vertical parallel plane which contains the outermost longitudinal edge of the end panel construction.

Alterations to the angle at which the fold lines 44 and 46 are set causes changes in the height of the end panel construction relevant to the exposed faces of the endmost articles in the carton.

For example, in a similar blank shown in Figure 2 of the drawings (in which like parts have been designated like reference numerals with the addition of suffix "a") fold lines 44a and 46a extend from fold line 38a to fold line 40a and from fold line 32a to fold line 30a, respectively, and are more closely aligned with the longitudinal axis of the blank. This arrangement in the erected carton brings the end panel construction to a location which is higher up in the carton than that shown in Figure 4.

Figure 3 shows a further blank having similar end panel constructions in which like parts are designated like reference numerals with the suffix "b" but which is adapted to carry a group of cans in two rows of two cans each. Therefore the retaining apertures at the top of the carton are shaped differently so as to suit the packaging of cans rather than bottles as in the previous embodiments. In this particular blank the fold lines 44b and 46b are set at an angle such that they are more sharply oblique relative to the longitudinal axis of the blank than is the case for the blank shown in Figure 1 and this results in the end panel construction in the erected carton being set at a lower height than that shown in Figure 4 of the drawings.

Claims

1. An article carrier of the wrap-around type having a top panel, bottom panel means and a pair of spaced side panels interconnected so as to form a tubular structure in which articles are accommodated, wherein each open end of the carrier is spanned by end panel means each end panel means being hinged to respective ones of the side panels of the carrier so that portions of the end panel means are folded adjacent said side panels internally of the carrier characterised in that the fold lines by which the end panel means are hinged to the carrier side panels extend downwardly and outwardly relative to the carton top wall towards said bottom panel means.

2. An article carrier according to claim 1, wherein said fold lines form portions of the extreme end edges of the side panels of the carrier.

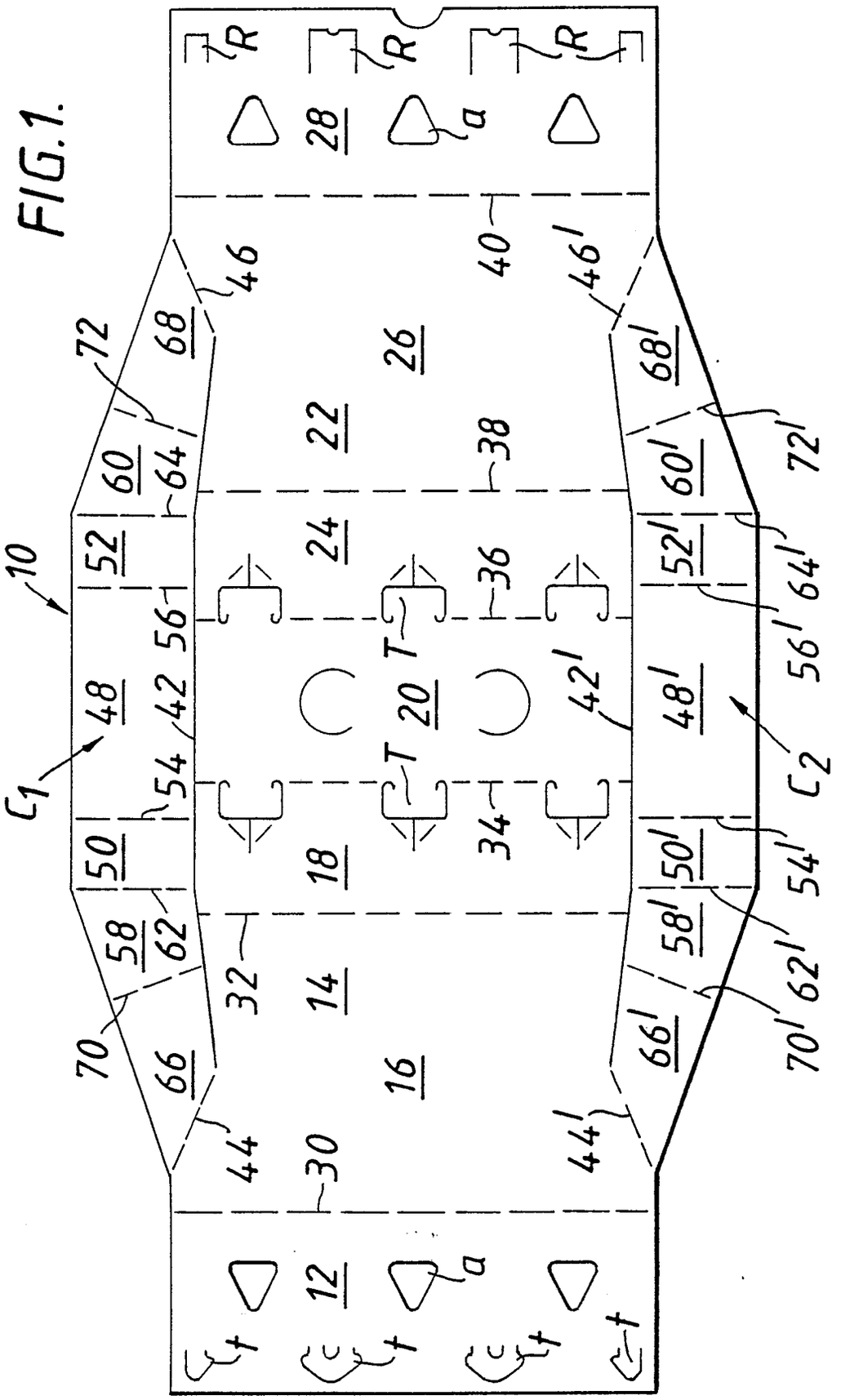
3. An elongate blank for forming a wrap-around article carrier which blank has a set of primary panels comprising in series a first base panel, a first side wall panel, a top panel, a second side wall panel and a second base panel hinged one to the next and wherein end panel means extend along opposite edges of the blank each end panel means having an extreme longitudinal edge which lies beyond that of the carton base panels characterised in that each of said end panel means is

connected to said primary panels only at each of its opposite ends, said connection being a fold line in a respective one of said side wall panels which fold line extends obliquely relative to the longitudinal axis of the blank.

4. A blank according to claim 3 wherein said end panel means is defined by said extreme longitudinal edge, a cut line struck from the blank across said top panel and extending into said first and second side wall panels and by said oblique fold lines, each oblique fold line extending between an end of said cut line and meeting an adjacent end of said extreme longitudinal edge.

5. A blank according to claim 4, wherein each oblique fold line meets said extreme longitudinal edge adjacent an end edge of the adjacent base panel of the blank.

FIG.1.


10
C1
C2
R
a
T
12
14
16
18
20
22
24
26
28
30
32
34
36
38
40
42
42'
44
44'
46
46'
48
48'
50
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52
52'
54
54'
56
56'
58
58'
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62'
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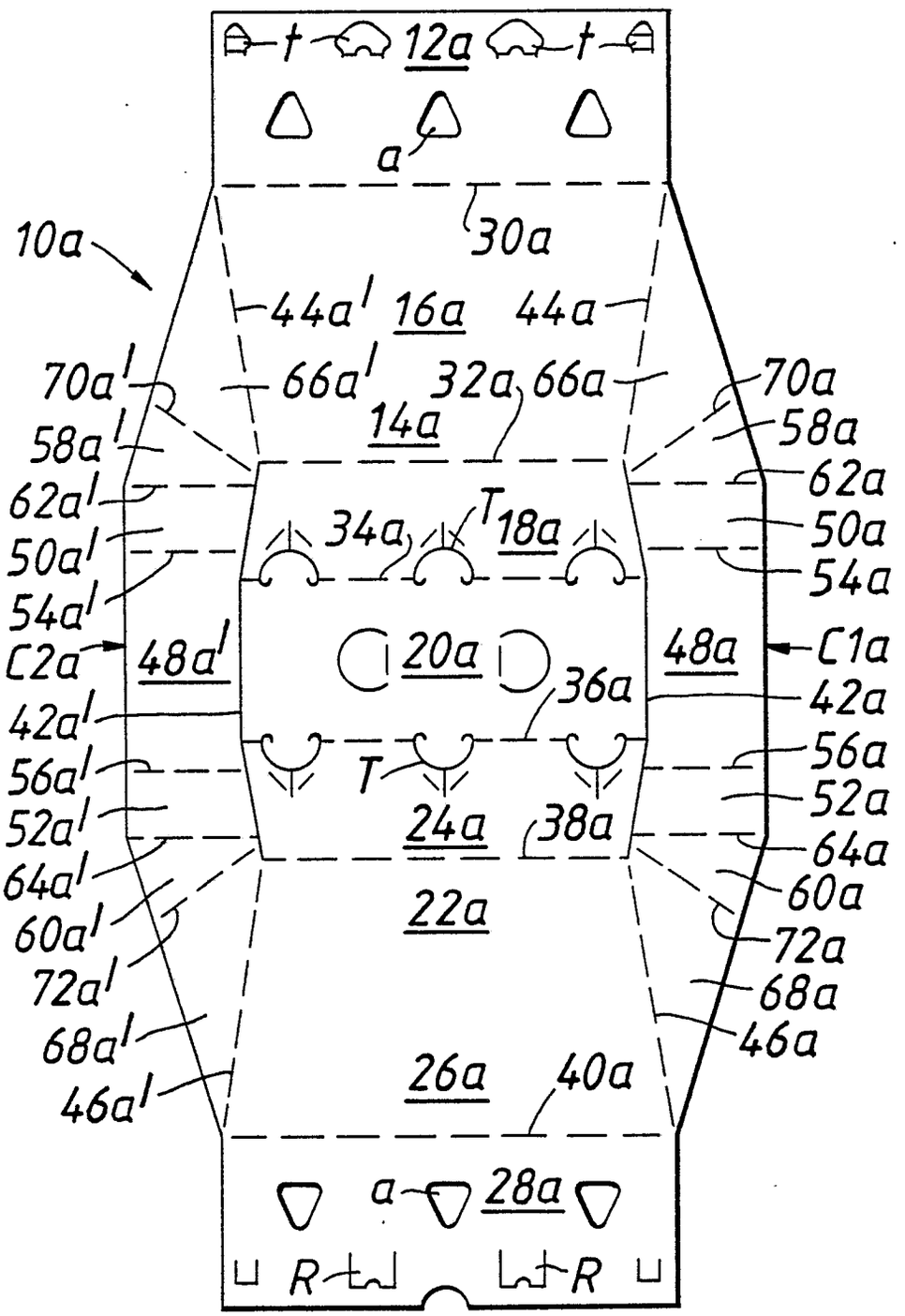
68'
70
70'
72
72'

FIG. 2.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a
30a
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44a'
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48a
C1a
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42a
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T
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64a
60a'
22a
60a
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68a'
68a
46a'
26a
40a
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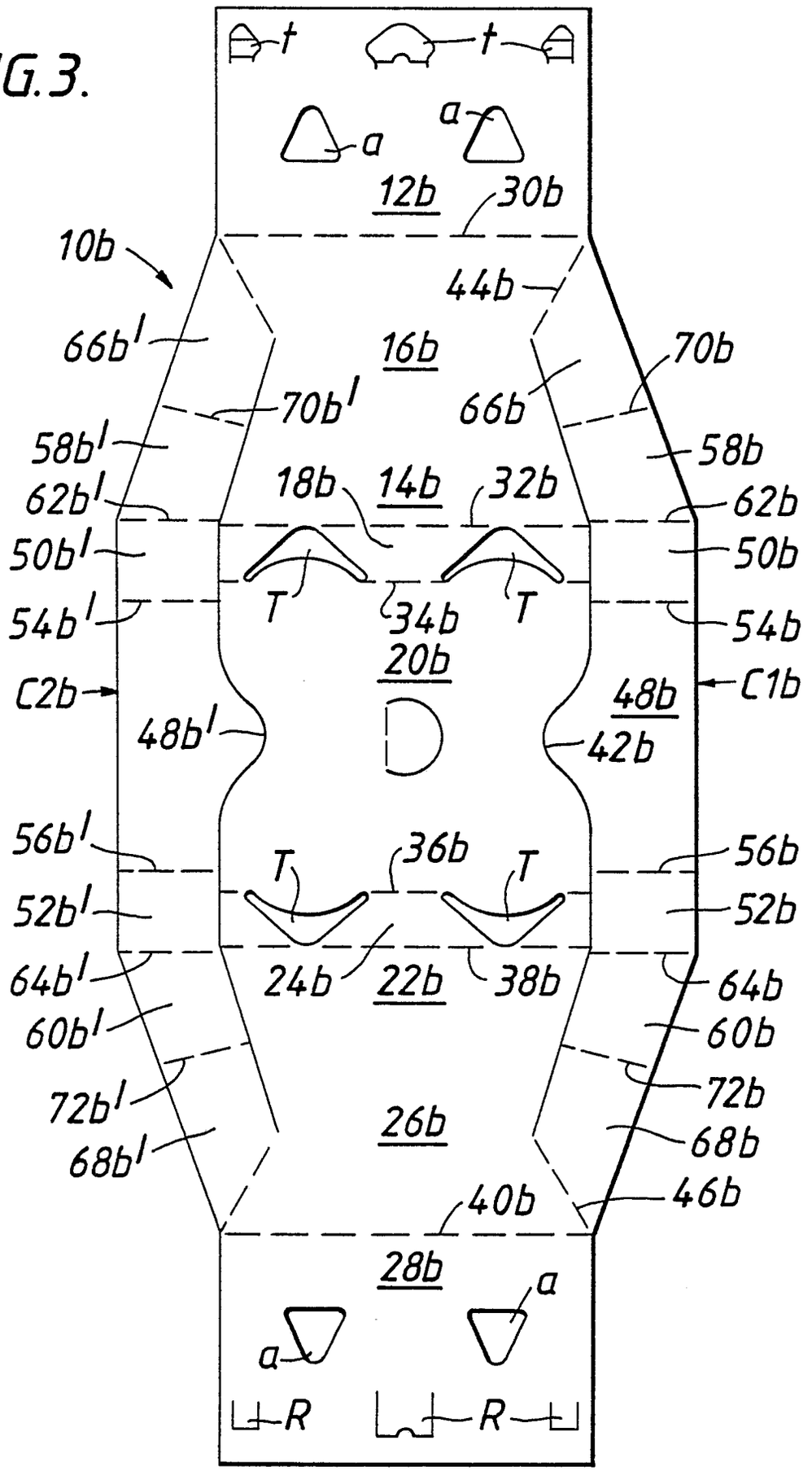
a
28a
R
R

FIG.3.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66b
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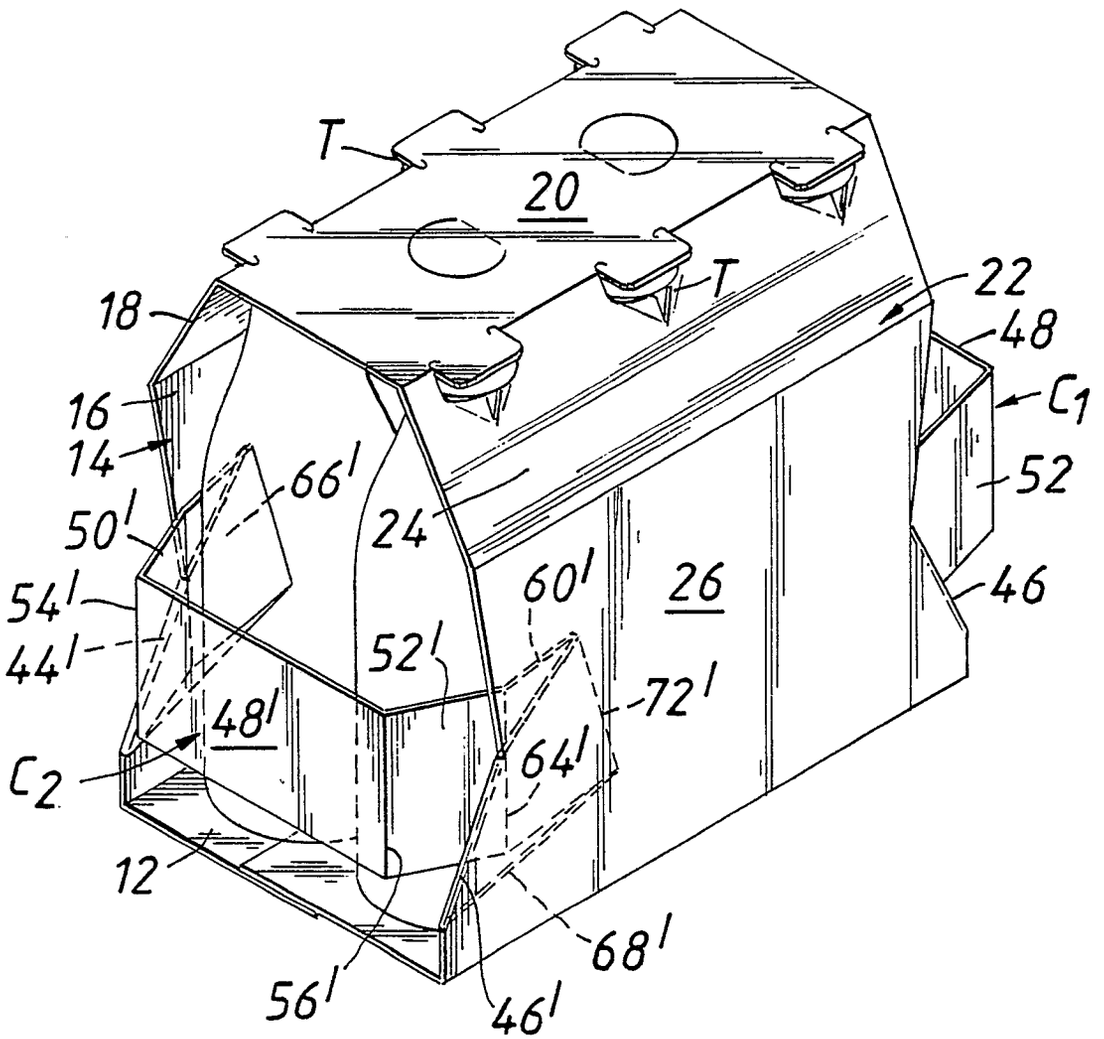
58b
18b
14b
32b
62b'
62b
50b'
50b
T
T
54b'
34b
54b
20b
C2b
48b
C1b
48b'
42b
56b'
36b
T
T
56b
52b'
52b
64b'
24b
22b
38b
64b
60b'
60b
72b'
72b
26b
68b'
68b
40b
46b
28b
a
a
R
R

FIG. 4.


T
20
T
22
18
48
16
C1
14
66'
52
50'
24
54'
60'
26
46
44'
52'
72'
48'
64'
C2
12
68'
56'
46'

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 30 0980

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)
D,A	US-A-3 747 835 (GRASER) * Whole document *	1,2,3,4	B 65 D 71/00
A	US-A-3 429 496 (HICKIN) * Whole document *	1,2,3,4	
A	FR-A-2 363 488 (MEAD CORP.) * Figures 2,3 *	1,3,4	
A	US-A-2 527 478 (GRAY)		
A	GB-A- 742 098 (THOMPSON & NORRIS)		

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B 65 D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	26-04-1990	MARTENS L.G.R.

CATEGORY OF CITED DOCUMENTS

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