(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number : **0 454 450 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number : **91303715.6**

(51) Int. Cl.[5] : **B65D 71/00**

(22) Date of filing : **24.04.91**

(30) Priority : **26.04.90 GB 9009614**

(43) Date of publication of application :
30.10.91 Bulletin 91/44

(84) Designated Contracting States :
BE DE ES FR GB IT NL

(71) Applicant : **THE MEAD CORPORATION**
2000 Courthouse Plaza NE
Dayton Ohio 45463 (US)

(72) Inventor : **Saulas, Alain**
24 Rue de la Loutre
F-36000 Chateauroux (FR)

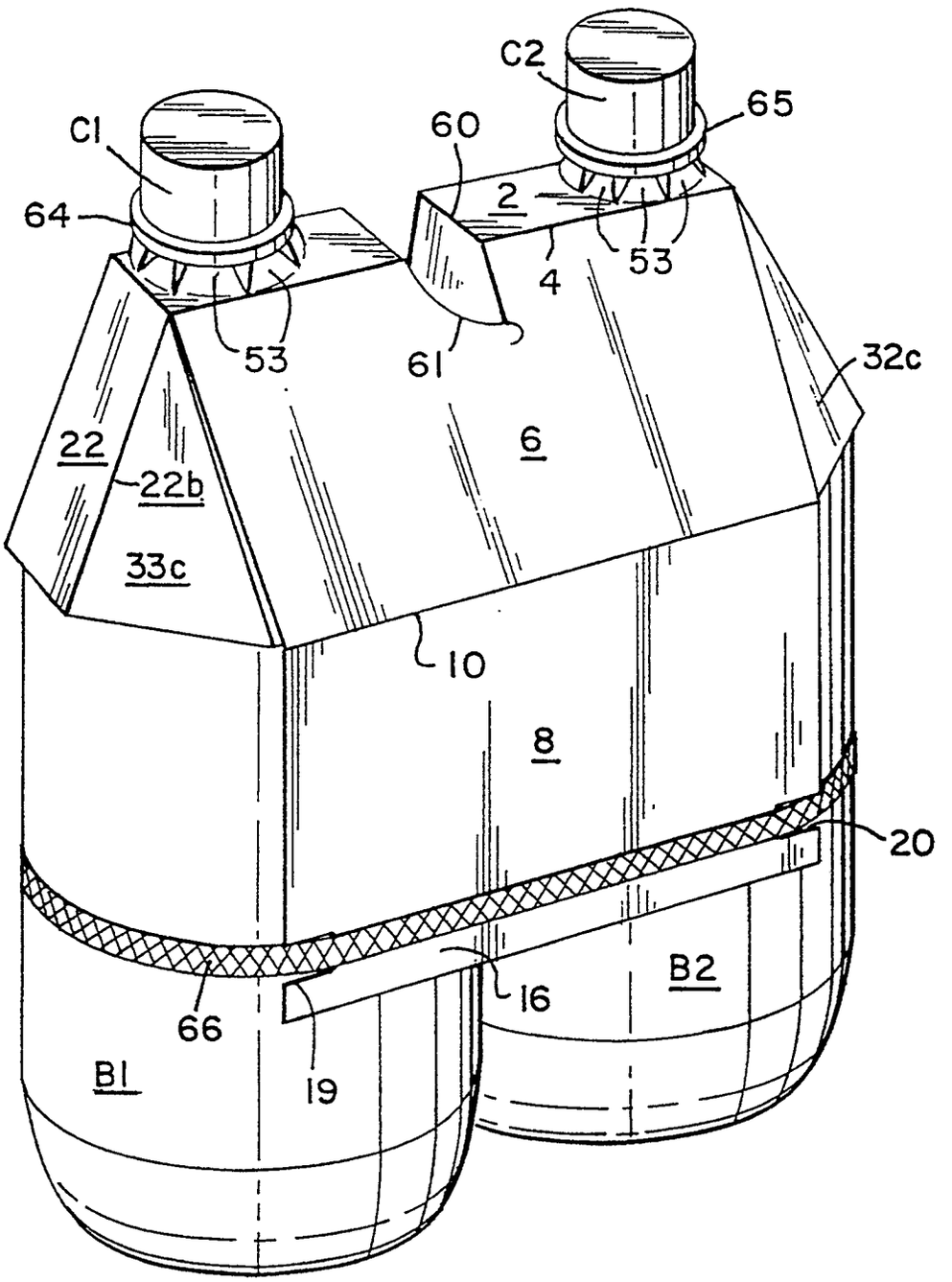
(74) Representative : **Hepworth, John Malcolm**
Hepworth Lawrence & Bryer 36 Regent Place
Rugby Warwickshire CV21 2PN (GB)

(54) Bottle carrier.

(57) A carrier accommodating a plurality of bottles (B1, B2) arranged in close side-by-side relationship, has a pair of opposing side walls which include mutually inclined upper portions (6, 8) hinged together adjacent the tops of the bottles providing a top (9) of the carrier which has bottle-neck receiving aperture (25, 26) for each bottle including bottle-neck engaging means (27, 28 ; 31, 32) to support the bottle when the carrier is lifted. The carrier also includes end walls (10, 11) connecting together upper portions of the side walls at each end of the carrier and providing, together with upper portions of the side walls a roof-like structure, and includes a strap tying the side walls to bottles and securing the bottles in side-by-side relationship to limit movement of the bottles away from one another.

EP 0 454 450 A1

FIG. 2.



This invention relates to a bottle carrier of the so-called top-gripping type which has no bottom wall but which grips and supports the bottles by engagement with neck portions of the bottles and which includes a peripheral band to maintain the bottles in close side-by-side relationship. More specifically the present invention is concerned with carriers in which bottle-neck receiving apertures are provided in a carrier top wall formed by a hinged connection between a pair of side walls of the carrier.

Skirted top-gripping bottle carriers have been known for some time. For example, EP-A-O 051 968 discloses such a bottomless top-gripping carrier in which a plurality of bottles are accommodated, and maintained in close side-by-side relationship by means of a peripheral skirt. The carrier has an end wall connecting together lower portions of the side walls at each end of the carrier and providing, together with lower portions of the side walls, a peripheral skirt to maintain the bottles in close side by side relationship and has at least one tie element connecting together upper portions of the side walls to limit movement of the upper portions away from one another.

In the present invention the top of the carrier is formed to provide a roof-like structure and a tying band ties together lower portions of the side walls and the bottles.

The invention provides a carrier accommodating a plurality of articles, such as bottles, arranged in close side-by-side relationship, which carrier comprises a pair of opposing side walls flanking wall portions of the bottles, said side walls including mutually inclined upper portions hinged together adjacent the tops of the bottles and providing a top of the carrier, said top having a bottle-neck receiving aperture for each bottle and including bottle-neck engaging means to support the bottle when the carrier is lifted, characterized by end walls connecting together upper portions of said side walls at each end of the carrier and providing, together with upper portions of said side walls, a roof-like structure, and by tying means securing said side walls to said bottles and securing said bottles in side-by-side relationship to limit movement of the bottles away from one another.

According to a feature of the invention the carrier may be adapted for two bottles, wherein a pair of bottle-neck receiving apertures is provided in said top and a hand gripping aperture is formed in said top.

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

FIGURE 1 is a plan view of a blank for use in forming a bottle carrier in accordance with the present invention; and

FIGURE 2 is a perspective view of a bottle carrier formed from the blank shown in Figure 1 and loaded with a pair of bottles.

Referring to Figure 1, there is shown a flat blank 1 of paperboard (or other foldable sheet material) which is cut and scored and capable of being erected, in combination with a cooperating strap, to form a carrier for a pair of bottles as shown in Figure 2. The blank 1 comprises a central strip 2 defined between a pair of parallel fold lines 3, 4. Opposing upper side panels 5, 6 for the carrier are hinged to respective side edges of the central strip 2 along the fold lines 3, 4, while the lower side panels 7, 8 are hinged to the upper side panels 5, 6 along respective fold lines 9, 10. The opposite ends of the central strip 1 and the opposite side edges of each of the panels 5, 6, 7, 8 are defined by respective common fold lines 12, 13 extending substantially the whole length of the blank 1. At each end of the blank 1, the lower side panels 7, 8 project beyond the adjacent portions of the blank. These projecting portions 15, 16 are formed at each side of the respective panel with a rectangular notch 17, 18, 19, 20, the mouths of which lie flush with the score lines 12, 13.

Extending from the ends of the central strip 2, and hinged thereto along the score lines 12, 13, are a pair of opposing end panels 22, 23 for the carrier. The side edges of these end panels 22, 23 are defined by fold lines 22a, 22b; 23a, 23b which are extensions of the fold lines 3, 4 which define the central strip 2.

Radiating outwardly from each corner of the central strip 2, within the right angles defined between score lines 12, 13 and perpendicular score lines 22a, 22b and 23a, 23b, are a respective pair of fold lines 30d, 30e; 31d, 31e; 32d, 32e; 33d, 33e. This defines a respective set of three triangular flaps 30a, 30b, 30c; 31a, 31b, 31c; 32a, 32b, 32c; 33a, 33b, 33c in each of the corners between the sides of the upper side panels 5, 6 and the sides of the end panels 22, 23. Each set of three triangular flaps comprises a pair of adjacent complementary tuck flaps 30a, 30b; 31a, 31b; 32a, 32b; 33a, 33b hinged to one another along fold lines 30d, 31d, 32d, 33d, and a triangular panel 30c, 31c, 32c, 33c which is on one side along fold line 30e, 31e, 32e, 33e to tuck flap 30b, 31b, 32b, 33b, and on the other along respective fold lines 22a, 23a, 23a, 23b to the associated end panel 22, 23. More particularly, triangular panel 30c is hinged to the side edge of end panel 22 along fold line 22a; tuck flap 30b is defined between fold lines 30d and 30e along which it is hinged to tuck flap 30a on one side and triangular panel 30c on the other; and tuck flap 30a is hinged on its other side to the side of upper side panel 5 along fold line 12. It will be seen from Figure 1 that each of the other three sets of triangular flaps 31a, 31b, 31c; 32a, 32b, 32c; and 33a, 33b, 33c are similarly arranged in the corners defined between end panel 23 and upper side panels 5 and 6, and between end panel 22 and upper side panel 6 respectively. To facilitate folding during erection of the carrier, a small triangular aperture 36, 37, 38, 39 is struck in the corner of each of the angles subtended between fold

lines 30e and 33e and fold line 12, and fold lines 31e and 32e and fold line 13 respectively.

The tuck flaps 30a, 31a, 32a, 33a, although generally triangular, are extended at their base so as to be integrally hinged to one end of a respective rectangular tuck flap 40, 41, 42, 43 along score lines 44, 45, 46, 47, which are simply extensions of fold lines 9 (44, 45) and 10 (46, 47). The rectangular tuck flaps 40, 41, 42, 43 are also hinged along one side to the sides of adjacent side panels 7 and 8 along respective portions of full-length score lines 12 and 13.

The central strip 2 is formed with a pair of circular bottle-neck receiving apertures 50, 51 located towards opposite ends thereof and spaced apart at a distance corresponding to the diameter of the bottles to be received. To the periphery of each aperture 50, 51 is a circular set of eight retaining tabs 53 which are defined by eight radial cuts 54. The radially inner edges of the tabs 53 of each bottle-neck receiving aperture 50, 51 define between them a respective smaller concentric central aperture 55, 56. The tabs 53 are hinged to periphery of their associated apertures 50, 51 along circular fold line 57, 58, which accordingly itself defines the periphery of that aperture.

Located between the bottle neck receiving apertures 50, 51 is a handle arrangement comprising a fold line 60 which extends transversely along across the width of the central strip 2, traversing each of the fold lines 3, 4 and extending into each of the upper side panels 5, 6 where it intersects a bow-shaped cut 61 towards opposite ends thereof. This cut 61 also extends transversely across the central strip 2 a short distance to one side of the fold line 60, and crosses each of the fold lines 3, 4 into panels 5, 6 where it curves towards and meets the opposite ends of the fold line 60 to define therewith a flap 62, hinged along fold line 60. Beyond its point of intersection with the fold line 60, the curvature of each end of the cut line 61 reverses sharply through 180 degrees, which serves to inhibit tearing in use of the handle. The flap 62 is formed with a pair of fold lines 62a, 62b which approximately bisect the outwardly facing right angles between the line 60, and each of the lines 3, 4 towards each end of the flap.

Formation of the completed carrier from the blank 1 shown in Figure 1, in combination with a belt or strap of plastics material, will now be described with further reference to Figure 2. First, upper side panels 5, 6 are folded relative to the central strip 2 about respective fold lines 3, 4. Simultaneously, triangular panels 30c, 31c, 32c, 33c are folded relative to end panels 22, 23 about fold lines 22a, 23a and 22b, 23b respectively. Next, the blank is folded along its entire length about fold lines 12 and 13. In so doing, rectangular flaps 40, 41, 42, 43 are folded inwards so as to lie flat against the adjacent inner surfaces of lower side panels 7, 8. Similarly, triangular tuck flaps 30a, 31a, 32a, 33a are folded inwardly about fold lines 12, 13 to lie in face-to-face contact with the inner surfaces of upper side panels 5, 6. At the same time the triangular tuck flaps 30b, 31b, 32b, 33b are each also folded down, along respective fold lines 30d, 31d, 32d, 33d, so as to lie in face-to-face relationship with tuck flaps 30a, 31a, 32a, 33a respectively to form a three-ply structure in each of these regions.

The end panels 22, 23 are then drawn outwardly to form, in conjunction with triangular panels 30c, 31c, 32c, 33c, a canopy structure at each end of the carrier. This is accomplished by folding triangular panels 30c, 31c, 32c, 33c relative both to tuck flaps 30b, 31b, 32b, 33b about fold lines 30e, 31e, 32e, 33e, and to their associated end panels 22, 23, by folding about fold lines 22a, 23a, 22b, 23b. At this stage, the carrier comprises a roof-like structure, formed by the central strip 2, upper side panels 5, 6, end panels 22, 23 and triangular panels 30c, 31c, 32c, 33c shaped to accommodate the tops of a pair of bottles B1, B2, and a pair of depending side walls provided by side panels 7, 8.

In order to load the pair of bottles B1, B2 into the carrier, the caps C1, C2 of the bottles are forced upwardly into and through the bottle neck receiving apertures 50, 51, thereby deflecting the peripheral retaining tabs 53 which subsequently resiliently engage behind the rims 64, 65 of the bottle caps to secure the bottles B1, B2 against withdrawal. In this position, the above-described roof-like portion of the carrier fits snugly over the tops of the bottles B1, B2, with the side panels 7, 8 hanging downwardly on each side parallel to, and in contact with, the side walls of the bottles. To complete the carrier, a strip 66 of heat shrinkable plastics material is wrapped around the side walls of the bottles B1, B2 embracing also the lower edge of each of the side panels 7, 8 and engaging in the rectangular notches 17, 18, 19, 20 therein. This strap 66 is then heat shrunk in position firmly to hold the bottles together and to secure the side panels 7, 8 in place against their side walls. The notches 17, 18, 19, 20 in the side panels 7, 8 serve to prevent the plastic strap 66 from sliding out of position. The loaded carrier can readily be lifted and carried using the handle feature located in the central strip 2 between the bottle caps C1, C2. This is accomplished by depressing the flap 62 to form an aperture through which fingers can be inserted, and then folding the flap 62 backwards about score line 60, until the central portion thereof comes into contact with the inner surface of central strip 2, a procedure which is facilitated by fold lines 62a, 62b.

This provides a reinforced two-ply lip along fold line 60 by means of which the carrier can be lifted and carried by engagement of the fingers thereunder.

It will be appreciated that carriers in accordance with the present invention can be adapted to accommodate more than one pair of bottles. For example, by extending the central strip 2 (and end panels 22, 23)

laterally and providing therein further pairs of bottle neck receiving apertures at intervals corresponding to the diameter of the bottles, further pairs of bottles can be packaged. Alternatively or, preferably additionally, the central strip 2 (and side panel 5, 6, 7, 8) can be elongated and formed with further bottle neck receiving apertures at bottle diameter intervals.

Furthermore, although described in its application to "bottomless" carriers, the invention could also be adapted for use with carriers having bottom panels supporting the bottles.

Conveniently, the height of the plastics strap 66, which need not necessarily be heat shrunk in order to provide a secure binding, is such as to obscure bar (price) code symbols on the individual bottles to encourage reading of a correct bar code symbol for the multiple pack appearing on the exterior of the carrier.

Claims

1. A carrier accommodating a plurality of articles, such as bottles, (B1 and B2) arranged in close side-by-side relationship, which carrier comprises a pair of opposing side walls flanking wall portions of the bottle, said side walls including mutually inclined upper portions (5,6) hinged together adjacent the tops of the bottles and providing a top (2) of the carrier, said top having a bottle-neck receiving aperture (50,51) for each bottle and including bottle-neck engaging means (53) to support the bottle when the carrier is lifted characterized by end walls connecting together upper portions of said side walls at each end of the carrier and providing, together with upper portions of said side walls a roof-like structure, and by tying means (66) securing said side walls to said bottles and securing said bottles in side-by side relationship to limit movement of the bottles away from one another.

2. A carrier according to claim 1 and claims dependent thereon adapted for two bottles, further characterized by a pair of bottle-neck receiving apertures (50, 51) provided in said top (2) and a hand gripping aperture (62) formed in said top.

3. A carrier according to claim 1 further characterised in that said end walls comprise canopy structures each of which extends from a corner of top (2).

4. A carrier as claimed in claim 3 wherein said canopy structure comprises a series of hinged panels.

5. A carrier as claimed in claim 4 wherein said end walls comprise an end panel hinged to two canopy structures and said canopy structure comprises three approximately triangular panels, a first triangular panel hinged to said end panel and a second triangular panel, where said second triangular panel is also hinged to a third triangular panel which in turn is hinged to an upper portion of said side walls.

6. A carrier as claimed in claims 4 or 5 which comprises a mechanical flap (40, 41, 42, 43) hinged to the side edges of said side walls and one of said panels in said canopy structure.

7. A carrier as claimed in claims 1 to 6 which further comprises engaging means (17, 18, 19, 20) for said tying means (66).

8. A carrier as claimed in claim 7 wherein said engaging means (17, 18, 19, 20) is a rectangular notch defined in a lower side panel (7, 8) of said side walls.

9. A carrier as claimed in claim 8 wherein a mouth of said engaging means is defined in said lower side panel (7, 8) where said mouth is flush with the side edge (12, 13) of said lower side panel.

10. A carrier as claimed in any preceding claim wherein said tying means (66) is a strip of heat shrinkable plastics.

FIG. 1.

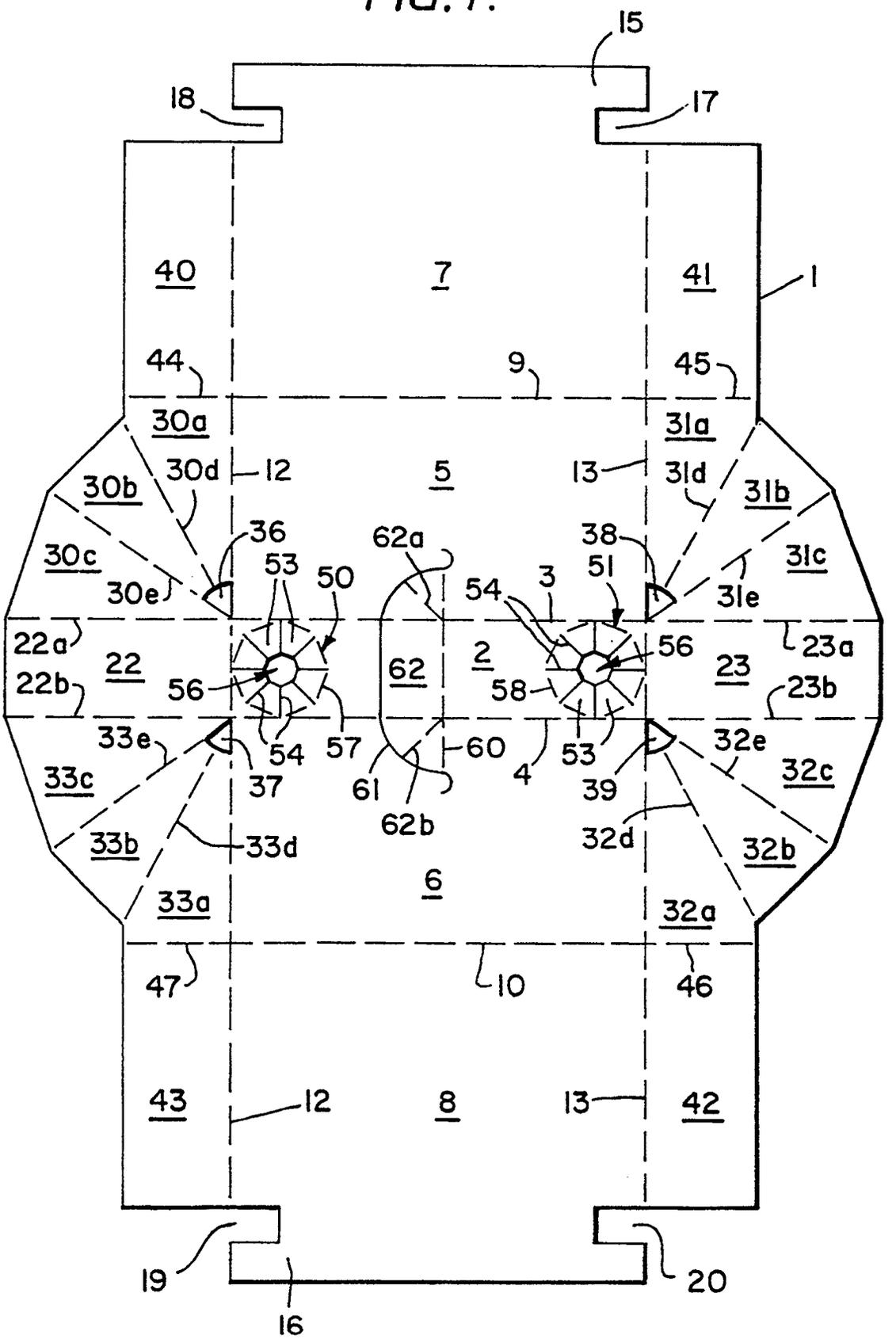
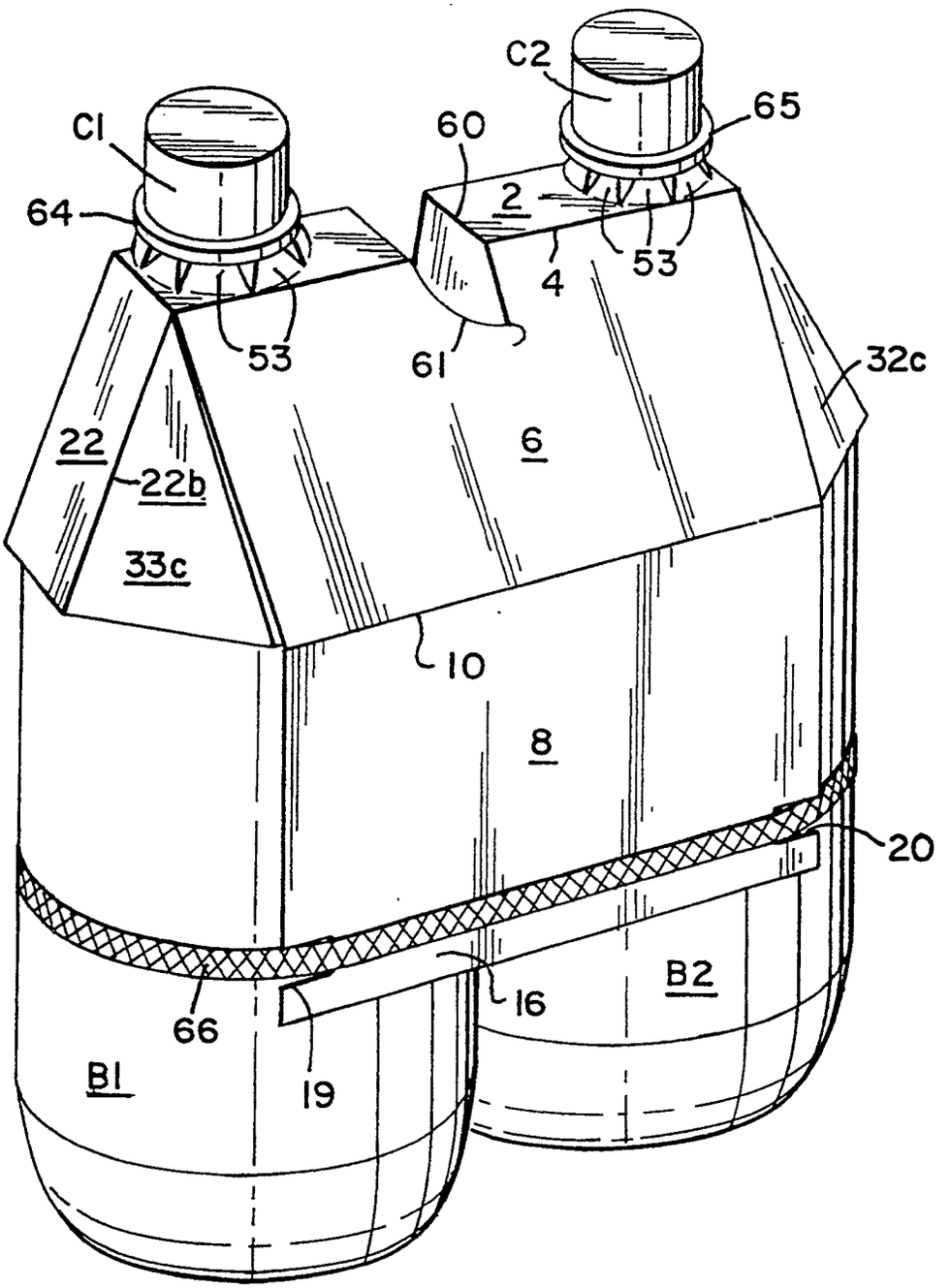

15
18
17
40
7
41
1
44
9
45
30a
31a
30d
12
5
13
31d
30b
31b
36
62a
38
30c
53
50
54
3
51
31c
30e
31e
22a
23a
22
62
2
56
23
22b
56
58
23b
33e
54
57
60
53
32e
33c
37
61
4
39
32c
62b
32d
33b
33d
32b
6
33a
32a
47
10
46
43
12
8
13
42
19
20
16

FIG. 2.



European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 91 30 3715

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-4378878 (GRASER) * figures 1, 2, 4 *	1, 2	B65D71/00
A	US-A-4304329 (GRASER) * figures 1, 2 *	1-4	
A	US-A-4190149 (OLIFF ET AL.) * figures 1, 2 *	1-5	
A	EP-A-0352589 (UNILEVER) * figures 5, 6 *	1	
A	US-A-4378879 (KILLY) * figure 1 *	1	
A	GB-A-2187161 (PACKAGING INNOVATION GROUP) * page 2, lines 40 - 54; figure 4 *	1, 7-9	
D,A	EP-A-0051968 (THE MEAD CORPORATION)		

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	15 JULY 1991	SPETTEL, J.D.M.L.

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 (P0401)