



EUROPEAN PATENT SPECIFICATION

Date of publication of patent specification :
21.04.93 Bulletin 93/16

Int. Cl.⁵ : **B65D 5/46**

Application number : **89304604.5**

Date of filing : **08.05.89**

Multi-unit carton with extensible handle.

Priority : **06.05.88 GB 8810780**

Date of publication of application :
08.11.89 Bulletin 89/45

Publication of the grant of the patent :
21.04.93 Bulletin 93/16

Designated Contracting States :
BE DE ES FR GB IT NL

References cited :
EP-A- 0 274 982
GB-A- 1 240 549
US-A- 2 662 684
US-A- 3 554 402
US-A- 4 498 619

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

Inventor : **Chaussadas, Jean**
71 Rue des Glycines Brassioux
F-36130 Deols (FR)

Representative : **Hepworth, John Malcolm**
J.M. Hepworth & Co. 36 Regent Place
Rugby Warwickshire CV21 2PN (GB)

EP 0 341 089 B1

Note : Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid (Art. 99(1) European patent convention).

Description

This invention relates to a carton having a reinforced handle structure which can be manipulated from a flat stowed condition into a raised condition in which it is extended upwardly above the top wall of the carton. The carton is particularly suitable for accommodating articles, eg. bottles in a group in which the articles are arranged so as to form end spaces in the article group at opposed ends of the carton. End portions of the handle structure are displaceable into such end spaces when the carton is lifted by the handle so as to shorten the distance between the opposite ends of a central handle strip of the handle so that it can be upwardly moved away from the carton top wall.

GB-A-1,240,549 discloses a can carrier made from cardboard which is of the kind comprising an open ended sleeve having two opposite sides connected by a top and bottom and includes a carrying handle extending across the top of the sleeve and hinged to each of the opposite side walls of the sleeve. The top and upper parts of the sides adjoining the top are formed from top overline thicknesses of the blank. A handle is formed by slits which extend through and across the top into and through the top adjoining side portions and terminate at hinges formed in the top adjoining side portions. When the handle is grasped, it is raised from a flat condition in which a substantial part of the handle lies in the plane of the top wall panel to a raised carrying position in which opposing end portions of the handle are displaced inwardly of the carton.

The present invention is concerned with a fully enclosed carton which is formed from a single blank of sheet material such as paperboard and in which a carrying handle is incorporated into the top panel structure of the carton thereby providing an effective handle without excessive use of paperboard stock. By extending the handle construction into the opposed adjoining portions of the end closure panels of the carton, the handle structure can be arranged so that it is included in marginal overlapping portions of the top panel which are joined together in order to form the basis sleeve instruction of the carton.

The carton of the present invention includes upper and lower end closure panels. Although such closure panels are not shown in the reference referred to above, such panel arrangements in cartons of the fully enclosed type are well known in the art and for example are disclosed in US-A-2955739.

The present invention provides a carton which is formed from a single blank of sheet material for accommodating a plurality of articles, said carton comprising a bottom wall panel, side walls joined to two opposing ends of said bottom panel and lower end closure panels hinged to the other two opposing ends of said bottom panel and extending upwardly there-

from, top panels hinged to the upper ends of said side wall panels and extending inwardly in overlapping relationship, outer and inner top end closure panels hinged to opposing ends of said top panels and extending downwardly in overlapping relationship with respect to each other and secured to said lower end closure panels, wherein a handle structure is severable from said top panels and arranged to be raised from a flat condition in which it lies in the plane of said overlapping top wall panels to a raised carrying position in which opposing end portions thereof are displaced inwardly of the carton, characterised in that said handle structure is formed from an inner portion of the outer one of said overlapping top panels extending along the inner margins thereof adjacent to a side wall and from the opposing end portions being provided from adjoining portions of said outer top end closure panels, displaceable parts being struck in part from the underlying top panel and in part from the inner top end closure panels and hinged to said underlying top panel and said inner top end closure panels so that said displaceable parts will be displaced inwardly by the opposing end portions of the handle structure when the carton is lifted.

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

FIGURE 1 is a perspective view of a carton blank for forming a carton according to the invention;

FIGURE 2 is a perspective view of the carton in which the handle structure is shown in a flat stowed condition;

FIGURE 3 is a perspective view similar to that of Figure 2 but in which the handle structure is shown in its raised condition;

FIGURE 4 is a side view of the carton in which the handle construction is shown in flat stowed condition, and

FIGURE 5 is a side view similar to Figure 4 but showing the handle structure in its raised condition.

Referring first to Figure 2 of the drawings, a group of bottles (not shown) arranged in six rows in a 4-5-4-4-5-4 row arrangement creates a group which conveniently can be accommodated in a generally hexagonal carton 'C' and in which end spaces S1 and S2 (Figure 3) are formed adjacent opposite end walls of the carton by virtue of the grouping arrangement. The carton 'C' is formed from a blank 10 (Figure 1) of paperboard or like foldable sheet material. The carton includes a top 12 comprising top panel 14 and top panel part 14' together with handle panel 16. Top panel 14 includes an end parts 14a, 14b at each of its ends which form part of an upper sloping wall 18 of the carton, each end part having foldably attached thereto a lower end closure panel 20, 22 respectively.

A displaceable panel 24, 24' (Figure 1) is struck partially from each of the top panel end parts respec-

tively and partially from adjacent portions of the top panel 14 each displaceable panel being hinged thereto at opposite ends along fold lines 26, 28 and 26', 28', respectively. The side edges of the displaceable panels are attached along frangible joins J1, J2 to adjacent parts of the top panel panels 14a and 14b. Panels 24, 24' each have intermediate transverse fold lines 25, 27; 25', 27' by which, it can be displaced about fold lines 26, 28; 26', 28' inwardly of the carton when the frangible joins J1, J2 are broken.

The handle panel 16 is integral with top panel part 14' and includes a central handle strip 30 which is reinforced by folded over reinforcing strip 32 hinged thereto to form a two ply handle. Handle strip 30 has foldably joined end parts 30a, 30b at each of its ends, each end part having foldably attached thereto a lower end closure panel 34, 36 respectively.

When the blank 10 shown in Figure 1 is formed into the carton 'C' the handle panel 16 is secured to top panel 14 in overlapping relationship so that end part 30a and lower end closure panel 34 are superposed upon end part 14a and end closure panel 20 respectively and, similarly, end part 30b and end closure panel 36 are superposed upon end part 14b and end closure panel 22 respectively. Thus the opposite end parts 30a and 30b of the handle panel overlap the displaceable panels 24, 24'

As best seen in Figures 3 and 5, when the handle panel 16 is grasped and the carton lifted, the handle is able to upwardly extend from its flat condition because its end parts are displaced inwardly of the carton into the end spaces present together with the top panel end parts when the frangible joins J1, J2 are broken as the carton is lifted by its handle. Thus, the distance between the opposite ends of the central handle strip is decreased as measured in a straight line across the top panel of the carton.

Referring again to Figure 1, blank 10 further comprises a bottom wall panel 40 which is hinged to top panel 14 by means of a side wall panel assembly comprising upper side wall panel 42 which provides a part of the upper sloping wall 18 of the carton and is hinged to top panel 14 along fold line 44; an intermediate side wall panel 46 hinged to upper side wall panel 42 along fold line 48, and a lower side wall panel 50 hinged to the intermediate side wall panel 46 along fold line 52 and to the bottom wall panel 40 along a fold line 54.

Likewise, bottom wall panel 40 is hinged to top panel part 14' by means of another side wall panel assembly comprising upper side wall panel 56, which provides a part of the upper sloping wall 18 of the carton, and is hinged to top panel part 14' along a fold line 58, an intermediate side wall panel 60 hinged to upper side wall panel along a fold line 62 and a lower side wall panel 64 hinged to the intermediate side wall panel 60 along a fold line 66 and to bottom wall panel 40 along a fold line 68.

Bottom wall panel 40 carries two series of lower wall panels, one of which comprises lower corner panels 70 and 72 hinged to panel 40 along fold lines 74 and 76, respectively, and a lower end panel 78 hinged to panel 40 along fold line 80 and the other panel series comprises lower corner panels 82 and 84 hinged to panel 40 along fold lines 86 and 88, respectively, and a lower end panel 90 hinged to panel 40 along fold line 92.

Panel 14 carries corner panel structures 44 and 96 which cooperate with corner panels 70 and 82 respectively to form corners C1 and C2 of the carton and likewise panel 14' carries corner panel structures 98 and 100 which cooperate with corner panels 72 and 84 respectively to form corners C3 and C4 of the carton.

Claims

1. A carton (C) which is formed from a single blank (10) of sheet material for accommodating a plurality of articles, said carton comprising a bottom wall panel (40), side walls (42, 46, 50, 56, 60, 64) joined to two opposing ends (54, 68) of said bottom panel and lower end closure panels (70, 72, 78, 82, 84, 90) hinged to the other two opposing ends (80, 92) of said bottom panel and extending upwardly therefrom, top panels (14, 14') hinged to the upper ends of said side wall panels and extending inwardly in overlapping relationship, outer (30a, 34; 30b, 36) and inner (14a, 20; 14b, 22) top end closure panels hinged to opposing ends of said top panels and extending downwardly in overlapping relationship with respect to each other and secured to said lower end closure panels, wherein a handle structure (16) is severable from said top panels and arranged to be raised from a flat condition in which it lies in the plane of said overlapping top wall panels to a raised carrying position in which opposing end portions (30a, 30b) thereof are displaced inwardly of the carton, characterised in that said handle structure is formed from an inner portion (30) of the outer one (14') of said overlapping top panels extending along the inner margins (58) thereof adjacent to a sidewall (56) and from the opposing end portions being provided from adjoining portions (30a, 30b) of said outer top end closure panels, and displaceable parts (24, 24') being struck in part from the underlying top panel (14) and in part from the inner top end closure panels and hinged to said underlying top panel and said inner top end closure panels so that said displaceable parts will be displaced inwardly by the opposing end portions of the handle structure when the carton is lifted.

2. A carton according to claim 1, wherein said displaceable parts each have opposed edges (J1,J2) which are frangibly joined to adjacent parts of the carton top panel when the handle is in its initial stowed position said frangible joins being broken when the carton is lifted to allow the hinged panels to be displaced inwardly.

Patentansprüche

1. Karton (C), der aus einem einzelnen Zuschnitt (10) eines Blattmaterials zum Unterbringen einer Anzahl von Gegenständen ausgebildet ist, wobei der Karton eine Bodenwand (40), Seitenwände (42, 46, 50, 56, 60, 64), die mit zwei entgegengesetzten Stirnseiten (54, 68) der Bodenwand verbunden sind, und untere Stirnseitenverschlusswände (70, 72, 78; 82, 84, 90), die an die anderen zwei entgegengesetzten Stirnseiten (80, 92) der Bodenwand angelenkt sind und sich davon nach oben erstrecken, Oberwände (14, 14'), die an die oberen Stirnseiten der Seitenwände angelenkt sind und sich in überlappender Beziehung nach innen erstrecken, äußere (30a, 34; 30b, 36) und innere (14a, 20; 14b, 22) obere Stirnseitenverschlusswände aufweist, die an entgegengesetzten Stirnseiten der Oberwände angelenkt sind und sich jeweils zueinander in überlappender Beziehung nach unten erstrecken und an den unteren Stirnseitenverschlusswänden befestigt sind, wobei eine Handgriffanordnung (16) trennbar von den Oberwänden und vorgesehen ist, aus einem flachen Zustand, in der sie in der Ebene der sich überlappenden Oberwände liegt, zu einer aufgerichteten Tragestellung angehoben zu werden, in der ihre entgegengesetzten Stirnseitenabschnitte (30a, 30b) zum Inneren des Kartons hin verlagert werden, dadurch gekennzeichnet, daß die Handgriffanordnung aus einem inneren Abschnitt (30) der äußeren (14') der sich überlappenden Oberwände gebildet ist, die sich entlang deren Innenkanten (58) benachbart zu einer Seitenwand (56) und von den entgegengesetzten Stirnseitenabschnitten, die von angrenzenden Abschnitten (30a, 30b) der äußeren oberen Stirnseitenverschlusswände gebildet werden, erstrecken, wobei verstellbare Teile (24, 24') teilweise von der darunterliegenden Oberwand (14) und teilweise von den inneren oberen Stirnseitenverschlusswänden freigestanzt und an der darunterliegenden Oberwand und den inneren oberen Stirnseitenverschlusswänden angelenkt sind, so daß die verstellbaren Teile von den entgegengesetzten Stirnseitenabschnitten der Handgriffanordnung nach innen verlagert werden, wenn der Karton angehoben wird.

2. Karton nach Anspruch 1, dadurch gekennzeichnet, daß die jeweils entgegengesetzte Kanten (J1, J2) aufweisenden verstellbaren Teile trennbar mit benachbarten Teilen der Kartonoberwand verbunden sind, wenn sich der Handgriff in seiner anfänglich untergebrachten Stellung befindet, wobei die trennbaren Verbindungen gebrochen werden, wenn der Karton angehoben wird, um den angelenkten verstellbaren Teilen zu erlauben, nach innen verlagert zu werden.

Revendications

1. Carton (C) constitué à partir d'une seule ébauche (10) de matériau en feuille destiné à loger une pluralité d'articles, ledit carton comportant un panneau de fond (40), des panneaux de côté (42, 46, 50, 56, 60, 64) assemblés à deux extrémités opposées (54, 68) dudit panneau de fond et des panneaux de fermeture d'extrémité inférieure (70, 72, 78; 82, 84, 90) articulés sur les deux autres extrémités opposées (80, 92) dudit panneau de fond et s'étendant vers le haut à partir de celui-ci, des panneaux de dessus (14, 14') articulés sur les extrémités supérieures desdits panneaux de côté et s'étendant vers l'intérieur en recouvrement l'un par rapport à l'autre des panneaux de fermeture d'extrémité supérieurs extérieurs (30a, 34; 30b, 36) et intérieurs (14a, 20; 14b, 22) articulés sur les extrémités opposées desdits panneaux de dessus et s'étendant vers le bas en recouvrement l'un par rapport à l'autre et fixés auxdits panneaux de fermeture d'extrémité inférieure, dans lequel une structure de poignée (16) est séparable desdits panneaux de dessus et disposée pour être soulevée d'une position à plat, dans laquelle elle se trouve dans le plan desdits panneaux de dessus en chevauchement, à une position de transport relevée, dans laquelle des parties opposées de l'extrémité (30a, 30b) correspondantes sont déplacées vers l'intérieur du carton, ledit carton étant caractérisé par le fait que ladite structure de poignée est constituée par une partie interne (30) du panneau de dessus extérieur (14') desdits panneaux de dessus en chevauchement, s'étendant sur les bords intérieurs (58) correspondants adjacents à un panneau de côté (56) et par les parties d'extrémité opposées formées des parties (30a, 30b) contiguës auxdits panneaux de fermeture d'extrémité supérieure et de parties mobiles (24, 24') prises, en partie, dans le panneau de dessus sous-jacent (14) et, en partie, dans les panneaux de fermeture de l'extrémité supérieure inférieure, et articulés audit panneau de dessus sous-jacent et aux panneaux de fermeture intérieurs d'extrémité supérieure, de manière que lesdites parties mobiles

soient déplacées vers l'intérieur par les parties des extrémités opposées de la structure de poignée lorsque le carton est soulevé.

2. Carton selon la revendication 1, caractérisé par le fait que les parties mobiles possèdent chacune des bords opposés (J1, J2) rattachés de manière partielle aux parties adjacentes du panneau de dessus du carton, lorsque la poignée se trouve en position à plat initiale, les éléments de jointoiment partiel étant rompus lorsque le carton est soulevé pour permettre le déplacement des panneaux mobiles vers l'intérieur.

15

20

25

30

35

40

45

50

55

5

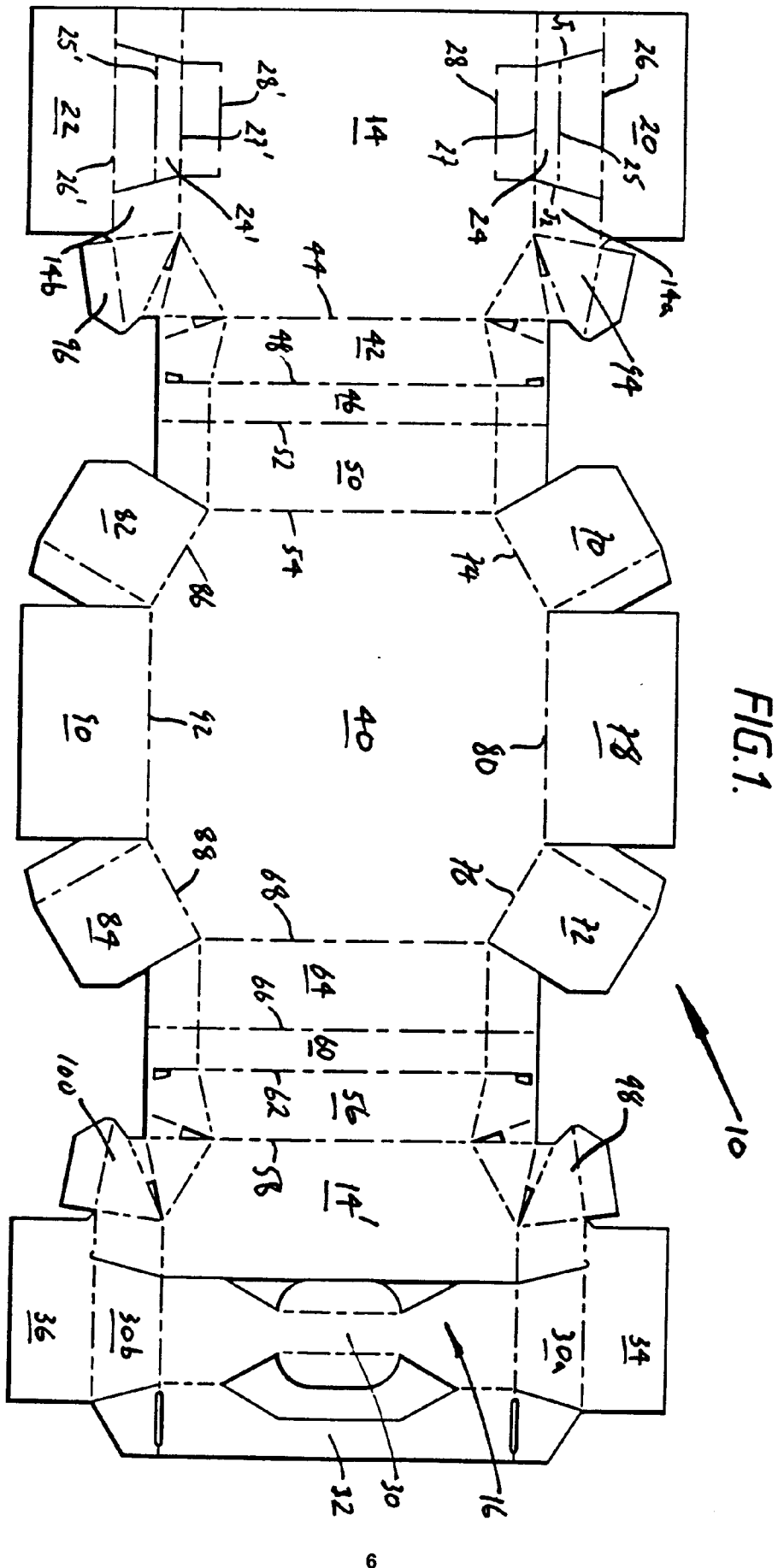


FIG. 2.

