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64 **HANDLE STRUCTURE FOR WRAP-AROUND CARRIER.**

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**EP-A- 37 683**  
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## Description

### Background of the invention

#### Field of the invention

The present invention is generally directed to a wrap-around carrier for carrying a plurality of beverage containers. In particular the invention is directed to a reinforced handle structure for such a carrier in which a drop-down partition is formed from a portion of the inner top panel.

### Description of the prior art

Carriers with drop-down partitions formed from the inner top panel of the carrier have been in commercial use for a number of years as illustrated by U.S. Patent Nos. 4,043,095, and 4,155,449. One problem associated with such carriers is that, in using one of the layers of paperboard to form the drop-down partition, only a single ply of paperboard was left in some areas surrounding the handle. These are the areas in which tearing and failure are most likely to occur. Heavier paperboard has been used in an attempt to overcome this problem. However, heavier paperboard is more expensive and the entire carrier must be made of the heavier paperboard when it may not be needed on most of the carrier except for the handle area.

Figure 2 of this application illustrates the handle structure of a carrier which has been marketed prior to the present invention. In that carrier, the design allows for double or triple ply thicknesses in some areas around the handle openings. However, other areas around the handle openings are only of a single ply thickness. As long as this carrier was fabricated from paperboard of a sufficient thickness it performed satisfactorily. However, to reduce the cost of the package and make the package commercially more competitive, it is desirable to fabricate such carriers from as light a weight paperboard as possible without losing the desired performance characteristics of the carrier.

It is an object of the present invention to enable carriers with drop-down partitions of the type described above to be made out of lighter weight paperboard without adversely affecting the performance characteristic of the carrier. In fact the use of the present invention has permitted these carriers to be made from 24 point paperboard when carriers using a handle structure such as that illustrated in Figure 2 of this application were made from 27 point paperboard.

### Summary of the invention

The present invention as defined in claims 1 and 2 accomplishes the above objectives by providing a reinforced handle structure which provides at least a double thickness of paperboard at critical stress areas adjacent the handle openings in the carrier top. A handle reinforcement section is provided adjacent the handle openings to provide the double ply thickness. The present invention and the advantages of the invention will be more apparent from the following description of the preferred embodi-

ment with reference to the accompanying drawings.

### Brief description of the drawings

Fig. 1 is a plan view of the carrier blank of the present invention;

Fig. 2 is a view of the inside of the adhesively bonded top panels of a prior art carrier; and

Fig. 3 is a view of the inside of the adhesively bonded top panels of the carrier of the present invention.

### Description of the preferred embodiment

Fig. 1 illustrates the blank 10 of the present invention which may be folded and adhesively bonded together to form a carrier. The blank 10 comprises a bottom panel 14, side panels 16 and 18, outer top panel 20, inner top panel 22, and end panels 24, 24', 26, 26', 28, 28' and 30, 30'.

The outer top panel 20 includes a pair of elongated, spaced-apart handle openings 32 and 34 provided with handle tabs 36 and 38. Handle opening 32 and handle tab 36 are defined by a die cut 40 and a fold line 42. Handle opening 34 and handle tab 38 are defined by a die cut 44 and a fold line 46. The handle tabs 36 and 38 are hingedly attached to the outer top panel 20 along the fold lines 42 and 46 respectively.

The inner top panel 22 includes a pair of elongated, spaced-apart handle openings 48 and 50, a drop-down portion 52 and a handle reinforcement section 54. The handle opening 48 and handle tab 56 are defined by a die cut 58 and fold line 60. The handle opening 50 and reinforcement tab 62 are defined by die cut 64 and fold line 66.

The drop-down portion 52 comprises a main partition portion 68 and a pair of connecting strips 70 and 72. The connecting strips 70 and 72 are hingedly joined to the inside top panel 22 along fold lines 74 and 76 which are aligned with the transverse centerlines of handle openings 48 and 50. Die cuts 73 and 75 along the die cut 78 define drop-down portion 52 from top panel 22.

The handle reinforcement section 54 of the inner top panel 22 is defined in part and adjacent the handle openings 48 and 50 by die cuts 58 and 64 which also define the inner edge portions of partition straps 70, 72. The remaining edge of the handle reinforcement section 54 is defined by a generally U-shaped die cut 78 which also defines a major portion of the upper edge of the main partition portion 68. The width of the handle reinforcement section 54 is equal to the distance between the outer edges of the handle openings 48 and 50 so that the reinforcement section 54 extends across the entire width of each of the handle openings 48 and 50. Prior art reinforcement such as that shown in U.S. Patent No. 4,043,095 extended only across a portion of the width of the handle openings.

When the blank 10 is formed into a carrier, the outer and inner top panels 20 and 22 are adhesively bonded together as shown in Fig. 3. As shown in Fig. 3, the outer top panel 20 overlays the inner top panel 22 and the panels are essen-

tially coextensive. The handle openings 32 and 34 of the outer top panel 20 and the handle openings 48 and 50 of the inner top panel 22 are aligned in both the transverse and longitudinal directions. Handle tabs 36, 38, 56 are bent inwardly as shown. The reinforcement tab 62 of the inner top panel 22 is folded back onto and adhesively bonded to the inner top panel 22 to form a three-ply handle portion between handle openings 32, 48 and 34, 50. The width of the reinforcing tab 62 corresponds to the distance between the inner edges of the handle openings 48 and 50. The ends of the handle openings 48 and 50 coincide with the ends of the handle openings 32 and 34. Thus, the areas to the left and right of the handle openings 32, 48 and 34, 50 in Fig. 3 are of double ply construction completely across the width of the handle openings to prevent tearing or failure of the handle. The reinforcement section 54 which is cut from the partition permits this reinforcement of the carrier on the left side in Fig. 3 while the double layer of outer top panel 20 and inner top panel 22 provide the double ply on the right side. Prior art carriers did not provide for a double ply of board across the entire width of the left side of handle openings 32, 48 and 34, 50. Reinforcement tab 62 bonded to inner top panel 22 (which is itself bonded to outer top panel 20) provides a triple ply layer between handle openings 34, 50 and 32, 48.

Referring to Fig. 2, in which a prior art handle structure is illustrated, reinforcing tab 202 is folded over and adhesively secured to inner top panel 204 which is adhesively secured to outer top panel 206. Thus, a triple ply is provided in the area covered by 202. A drop down partition 210 has an upper edge defined by die cut 212. A reinforcement tab 214 on inner top panel 204 provides some reinforcement in handle area 216. However, in the critical areas to the right and left of handle opening 208, there is only a single ply of board (outer top panel 206).

Thus, comparing Fig. 3 to Fig. 2 it can be seen that handle reinforcement section 54 provides double ply thickness around the handle openings 34, 50 and 32, 48 as opposed to prior art such as illustrated in Fig. 2 which provided only single ply thickness around some areas of the handle openings. Because at least double ply thicknesses are provided, a thinner paperboard such as 24 point paperboard may be advantageously employed as opposed to the prior art carriers which required 27 point paperboard. Thus, savings in weight and cost are achieved with the novel construction of the present invention.

While the invention has been described with respect to a preferred embodiment thereof it is not to be so limited as changes and modifications may be made which are within the full intended scope of the invention as defined by the appended claims.

### Claims

1. In a wrap-around carrier for transporting a plurality of beverage containers, said carrier including a bottom panel (14), a pair of side panels,

a plurality of end panels and a pair of overlapping top panels (20, 22) which panels form a package enclosing said plurality of beverage containers;

said top panels (20, 22) including an outer top panel (20), and an inner top panel (22), said inner and outer top panels being substantially coextensive with said outer top panel (20) overlaying said inner top panel (22) and being adhesively bonded thereto;

said outer top panel (20) including a pair of elongated outer handle openings (32, 34) therein, said outer handle openings each having a tab (36, 38) hingedly joined to an inner longitudinal edge (42, 46) of the outer handle opening, said tabs adapted to be folded inwardly when fingers are inserted into the outer handle opening to lift the carrier; and

said inner top panel (22) including a pair of elongated inner handle openings (48, 50) which are aligned with and substantially the same size as the outer handle openings (32, 34), said inner handle openings each having a tab (56, 62) hingedly joined to an inner longitudinal edge (60, 66) of the inner handle opening with one of said inner tabs (56, 62) being folded back onto and adhesively bonded to the inner top panel whereby the folded back inner handle tab and the portions of the outer and inner top panels (20, 22) between the handle openings provide a three ply layer between the handle openings and the other of said inner handle tabs (56, 62) being adapted to be folded inwardly when fingers are inserted into the inner handle opening (48, 50) to lift the carrier, said inner top panel including a drop-down partition (52) formed therein comprising a main partition portion (68) joined to the inner top panel (22) by a pair of straps (70, 72) which extend adjacent the inner handle openings (48, 50) and parallel to the longitudinal center lines of the inner handle openings, said straps (70, 72) being hingedly joined to the inner top panel (22) along fold lines (74, 76) extending parallel to and substantially coextensive with the transverse center lines of the handle openings, characterized in that

said inner top panel (22) including a handle reinforcement section (54) adhesively bonded to said outer top panel (20), said handle reinforcement section (54) extending the width of the inner handle openings (48, 50) and being defined by a die cut (78) which defines the upper edge of the main partition portion (68) and a portion of the lower inner edge of the partition straps (70, 72).

2. In a blank (10) for forming a wraparound carrier for transporting a plurality of beverage containers, said carrier blank (10) including a bottom panel (14), a pair of side panels connected to said bottom panel along fold lines, a pair of overlapping top panels (20, 22) connected along fold lines to said side panels and a plurality of end panels connected along fold lines to said bottom, side, and top panels;

said top panels (20, 22) including an outer top panel (20) and an inner top panel (22);

said outer top panel (20) including a pair of elongated outer handle openings (32, 34) therein,

said outer handle openings each having a tab (36, 38) hingedly joined to an inner longitudinal edge (42, 46) of the outer handle openings;

said inner top panel (22) including a pair of elongated inner handle openings (48, 50) substantially the same size as the outer handle openings (32, 34), said inner handle openings each having a tab (56, 62) hingedly joined to an inner longitudinal edge (60, 66) of the inner handle openings (48, 50);

said inner top panel (22) including a drop down partition (52) formed therein including a main partition portion (68) joined to the inner top panel (22) by a pair of straps (70, 72) which extend adjacent the inner handle openings and parallel to the longitudinal center lines of the inner handle openings, said straps (74, 76) extending parallel to and substantially coextensive with the transverse center lines of the inner handle openings, the improvement comprising:

said inner pop panel (22) including a handle reinforcement section (54) extending the width of the inner handle openings (48, 50) and being defined by a die cut (78) which defines the upper edge of the main partition portion (68) and a portion of the lower inner edge of the partition straps (70, 72).

#### Patentansprüche

1. Umschlag-Träger zum Transport einer Mehrzahl von Getränkebehältern, welcher eine Bodenwand (14), ein Paar Seitenwände, eine Mehrzahl von Endwänden und ein Paar überlappender Deckenwände (20, 22) umfaßt, welche eine Verpackung bilden, die die Mehrzahl von Getränkebehältern umschließt, wobei

die Deckenwände (20, 22) eine äußere Deckenwand (20) und eine innere Deckenwand (22) umfassen, welche im wesentlichen dieselbe Ausdehnung aufweisen und wobei die äußere Deckenwand (20) die innere Deckenwand (22) überlappt und an dieser klebend befestigt ist;

die äußere Deckenwand (20) ein Paar länglicher äußerer Grifföffnungen (32, 34) umfaßt, wobei jede dieser äußeren Grifföffnungen eine Lasche (36, 38) aufweist, die klappbar mit einer inneren Längskante (42, 46) der äußeren Grifföffnung verbunden ist und dafür vorgesehen ist, nach innen gefaltet zu werden, wenn Finger in die äußere Grifföffnung eingreifen, um den Träger anzuheben; und

die innere Deckenwand (22) ein Paar länglicher innerer Grifföffnungen (48, 50) umfaßt, die mit den äußeren Grifföffnungen (32, 34) ausgerichtet sind und im wesentlichen dieselbe Größe besitzen wie diese, wobei jede der inneren Grifföffnungen eine Lasche (56, 62) aufweist, die klappbar mit einer inneren Längskante (60, 66) der inneren Grifföffnung verbunden ist, wobei eine der inneren Laschen (56, 62) auf die innere Deckenwand zurückgefaltet und mit dieser klebend verbunden wird, wodurch die zurückgefaltete innere Griffflasche und die Abschnitte der äußeren und inneren Deckenwände (20, 22) eine dreilagige Schicht

zwischen den Grifföffnungen bilden und die andere der inneren Griffflaschen (56, 62) dafür vorgesehen ist, nach innen gefaltet zu werden, wenn Finger in die inneren Grifföffnungen (48, 50) eingreifen, um den Träger anzuheben;

die innere Deckenwand umfaßt eine darin gebildete herunterfallende Trennwand (52), welche einen Haupttrennabschnitt (68) aufweist, der mit der inneren Deckenwand (22) durch ein Paar Bänder (70, 72) verbunden ist, die sich benachbart zu den inneren Grifföffnungen (48, 50) und parallel zu den längsverlaufenden Mittellinien der inneren Grifföffnungen erstrecken und die mit der inneren Deckenwand (22) entlang Faltlinien (74, 76) faltbar verbunden sind, welche sich parallel zu den querverlaufenden Mittellinien der Grifföffnungen und im wesentlichen mit der gleichen Ausdehnung wie diese erstrecken, dadurch gekennzeichnet, daß die innere Deckenwand (22) einen Griffverstärkungsabschnitt (54) umfaßt, welcher mit der äußeren Deckenwand (20) klebend verbunden ist und sich über die Breite der inneren Grifföffnungen (48, 50) erstreckt und durch eine Ausstanzung (78) definiert ist, die wiederum die obere Kante des Haupttrennabschnitts (68) und einen Abschnitt der unteren inneren Kante der Trennbänder (70, 72) definiert.

2. Zuschnitt (10) zur Bildung eines Umschlag-Trägers zum Transport einer Mehrzahl von Getränkebehältern, der eine Bodenwand (14), ein Paar mit der Bodenwand entlang Faltlinien verbundener Seitenwände, ein Paar sich überlappende Deckenwände (20, 22), die entlang Faltlinien mit den Seitenwänden verbunden sind, und eine Mehrzahl von Endwänden umfaßt, die entlang Faltlinien mit der Bodenwand, den Seiten- und den Deckenwänden verbunden sind;

die Deckenwände (20, 22) umfassen eine äußere Deckenwand (20) und eine innere Deckenwand (22);

die äußere Deckenwand (20) umfaßt ein Paar länglicher äußerer Grifföffnungen (32, 34), von welchen jede eine Lasche (36, 38) aufweist, die mit einer inneren Längskante (42, 46) der äußeren Grifföffnungen faltbar verbunden ist;

die innere Deckenwand (22) umfaßt ein Paar länglicher innerer Grifföffnungen (48, 50), die im wesentlichen dieselbe Größe besitzen wie die äußeren Grifföffnungen (32, 34), wobei jede der inneren Grifföffnungen eine Lasche (56, 62) aufweist, die mit einer inneren Längskante (60, 66) der inneren Grifföffnungen (48, 50) verbunden ist;

die innere Deckenwand (22) umfaßt eine darin gebildete nach unten klappende Trennwand (52), welche einen Haupttrennabschnitt (68) aufweist, der mit der inneren Deckenwand (22) durch ein Paar Bänder (70, 72) verbunden ist, die sich benachbart zu den inneren Grifföffnungen und parallel zu den längsverlaufenden Mittellinien der inneren Grifföffnungen erstrecken und die mit der inneren Deckenwand (22) entlang Faltlinien (74, 76) faltbar verbunden sind, welche sich parallel zu den querverlaufenden Mittellinien der inneren Grifföffnungen und im wesentlichen mit der glei-

chen Ausdehnung wie diese erstrecken, wobei die Verbesserung folgendes beinhaltet:

die innere Deckenwand (22) umfaßt einen Griffverstärkungsabschnitt (54), der sich über die Breite der inneren Grifföffnungen (48, 50) erstreckt und durch eine Ausstanzung (78) definiert ist, die wiederum die obere Kante des Haupttrennabschnitts (68) und einen Abschnitt der unteren inneren Kante der Trennbänder (70, 72) definiert.

## Revendications

1. Dans un support de transport enveloppant destiné à transporter plusieurs récipients, ledit support de transport comprenant un panneau inférieure (14), deux panneaux latéraux, plusieurs panneaux extrêmes et deux panneaux supérieurs (20, 22) se recouvrant, lesquels panneaux forment un emballage renfermant lesdites récipients à boissons;

lesdites panneaux supérieurs (20, 22) contenant un panneau supérieur extérieur (20) et un panneau supérieur intérieur (22), lesdits panneaux supérieurs intérieur et extérieur étant sensiblement de même étendue, ledit panneau supérieur extérieur (20) recouvrant ledit panneau supérieur intérieur (22) et étant lié par adhésif à celui-ci;

ledit panneau supérieur extérieur (20) présentant deux ouvertures extérieures allongées (32, 34) de poignée, lesdites ouvertures extérieures de poignée ayant chacune une patte (36, 38) articulée sur un bord longitudinal intérieur (42, 46) de l'ouverture de poignée extérieure, lesdites pattes étant conçues pour être pliées vers l'intérieur lorsque des doigts sont insérés dans l'ouverture de poignée extérieure pour soulever le support de transport; et

ledit panneau supérieur intérieur (22) présentant deux ouvertures intérieures allongées (48, 50) de poignée qui sont alignées avec les ouvertures extérieures (32, 34) de poignée et qui ont sensiblement les mêmes dimensions, lesdites ouvertures intérieures de poignée ayant chacune une patte (56, 62) articulée sur un bord longitudinal intérieur (60, 62) de l'ouverture intérieure de poignée, l'une desdites pattes intérieures (56, 62) étant repliée et liée par adhésif sur le panneau supérieur intérieur de manière que la patte intérieure repliée de poignée et les parties des panneaux supérieurs extérieur et intérieur (20, 22) entre les ouvertures de poignée constituent une couche à trois jets entre les ouvertures de poignée, et l'autre desdites pattes intérieures (56, 62) de poignée étant conçue pour être pliée vers l'intérieur lorsque des doigts sont insérés dans les ouvertures intérieures (48, 50) de poignée pour soulever le support de transport, ledit panneau supérieur intérieur comprenant une cloison descendante (52) formée dans ce panneau et comportant une partie de cloison principale (68) reliée au panneau supérieur intérieur (22) par deux bandes (70, 72) qui s'étendent à proximité immédiate des ouvertures intérieures (48, 50) de poignée et parallèlement aux axes centraux longitu-

dinaux des ouvertures intérieures de poignée, lesdites bandes (70, 72) étant articulées sur le panneau supérieur intérieur (22) suivant des lignes de pliage (74, 76) s'étendant parallèlement à et étant sensiblement de même étendue que les lignes centrales transversales des ouvertures de poignée, support de transport enveloppant caractérisé en ce que

ledit panneau supérieur intérieur (22) comprend une partie (54) de renfort de poignée liée par adhésif audit panneau supérieur extérieur (20), ladite partie (54) de renfort de poignée s'étendant sur la largeur des ouvertures intérieures (48, 50) de poignée et étant définie par une découpe (78) à l'emporte-pièce qui définit le bord supérieur de la partie de cloison principale (68) et une partie du bord intérieur inférieur des bandes (70, 72) de la cloison.

2. Dans un flan (10) pour former un support de transport enveloppant destiné à transporter plusieurs récipients à boissons, ledit flan (10) du support de transport comprenant un panneau inférieure (14), deux panneaux latéraux reliés audit panneau inférieure suivant des lignes de pliage, deux panneaux supérieurs (20, 22) se recouvrant, reliés suivant des lignes de pliage auxdits panneaux latéraux, et plusieurs panneaux extrêmes reliés suivant des lignes de pliage auxdits panneaux inférieure, latéraux et supérieurs;

lesdits panneaux supérieurs (20, 22) comprenant un panneau supérieur extérieur (20) et un panneau supérieur intérieur (22);

ledit panneau supérieur extérieur (20) contenant deux ouvertures extérieures allongées (32, 34) de poignée, lesdites ouvertures extérieures de poignée ayant chacune une patte (36, 38) articulée sur un bord longitudinal intérieur (42, 46) des ouvertures extérieures de poignée;

ledit panneau supérieur intérieur (22) présentant deux ouvertures intérieures allongées (48, 50) de poignée sensiblement de mêmes dimensions que les ouvertures extérieures (32, 34) de poignée, lesdites ouvertures intérieures de poignée ayant chacune une patte (56, 62) articulée sur un bord longitudinal intérieur (60, 66) des ouvertures intérieures (48, 50) de poignée;

ledit panneau supérieur intérieur (22) comprenant une cloison tombante (52) formée dans ce panneau et comprenant une partie de cloison principale (68) reliée au panneau supérieur intérieur (22) par deux bandes (70, 72) qui s'étendent à proximité immédiate des ouvertures intérieures de poignée et parallèlement aux lignes centrales longitudinales des ouvertures intérieures de poignée, lesdites bandes (70, 72) étant articulées sur le panneau supérieur intérieur (22) suivant des lignes de pliage (74, 76) s'étendant parallèlement à et sensiblement de même étendue que les lignes centrales transversales des ouvertures intérieures de poignée, le perfectionnement comprenant:

ledit panneau supérieur intérieur (22) qui comporte une partie (54) de renfort de poignée s'étendant sur la largeur des ouvertures intérieures (48,

50) de poignée et définie par une découpe (78) à l'emporte-pièce qui définit le bord supérieur de la partie de cloison principale (68) et une partie du

bord intérieur inférieur des bandes (70, 72) de cloison.

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