

Nov. 21, 1967

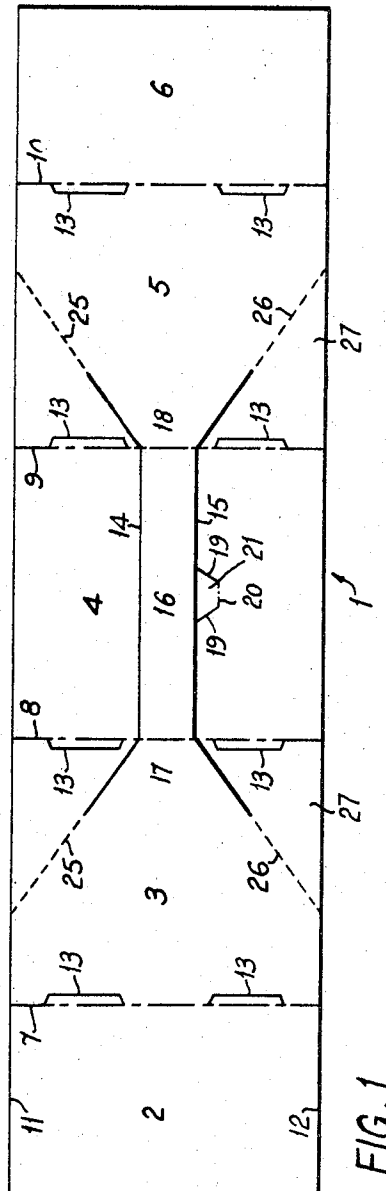
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3,353,709

CARRIERS MADE FROM CARDBOARD OR SIMILAR MATERIALS

Filed May 27, 1965

4 Sheets-Sheet 1



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CARRIERS MADE FROM CARDBOARD OR SIMILAR MATERIALS

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4 Sheets-Sheet 2

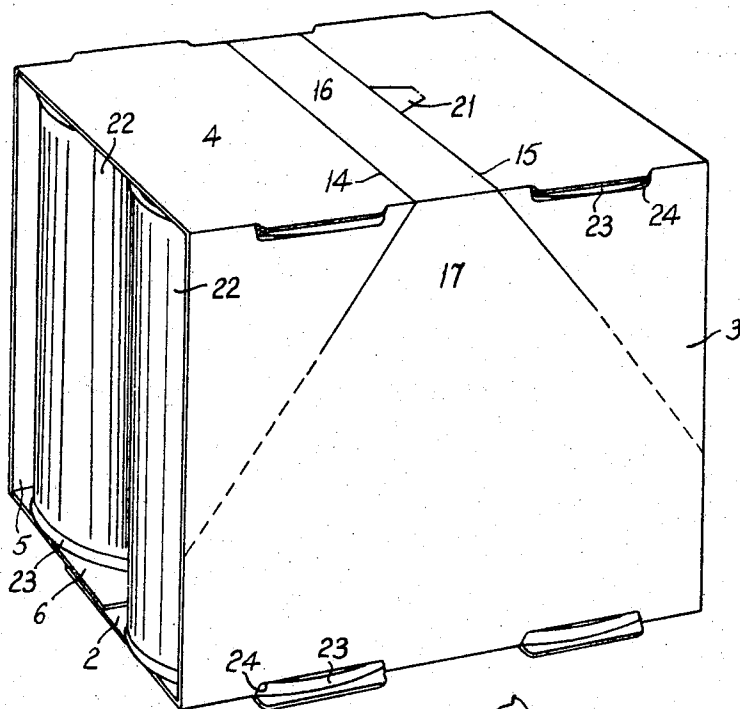


FIG. 2

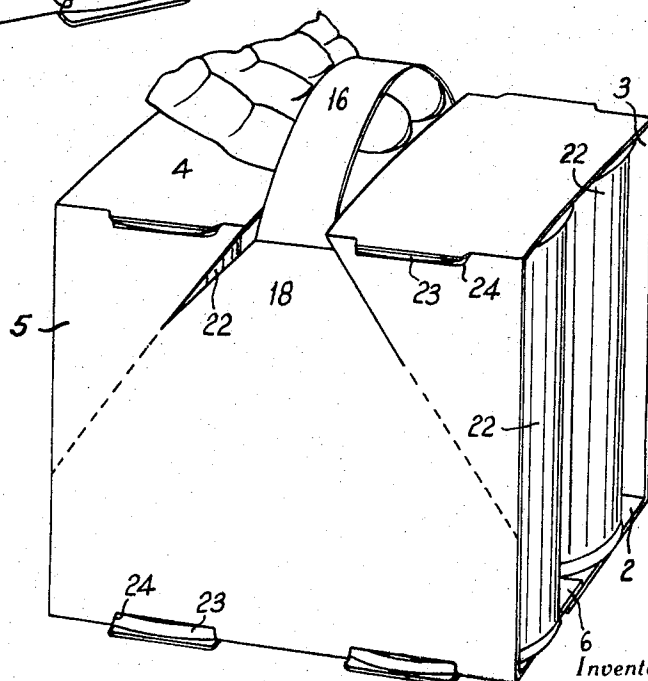


FIG. 3

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CARRIERS MADE FROM CARDBOARD OR SIMILAR MATERIALS

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4 Sheets-Sheet 3

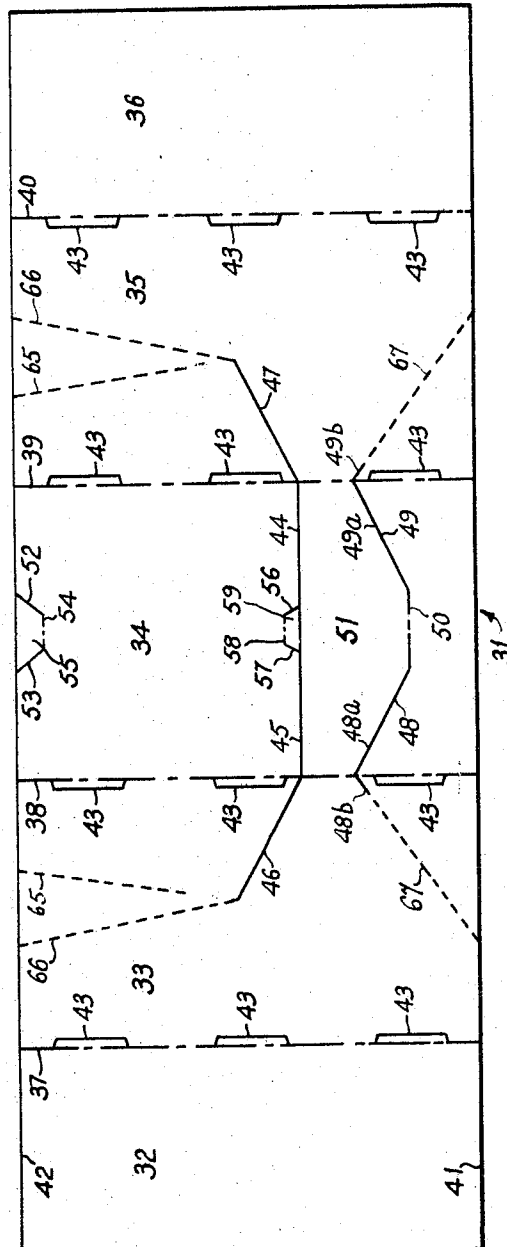


FIG. 4

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4 Sheets-Sheet 4

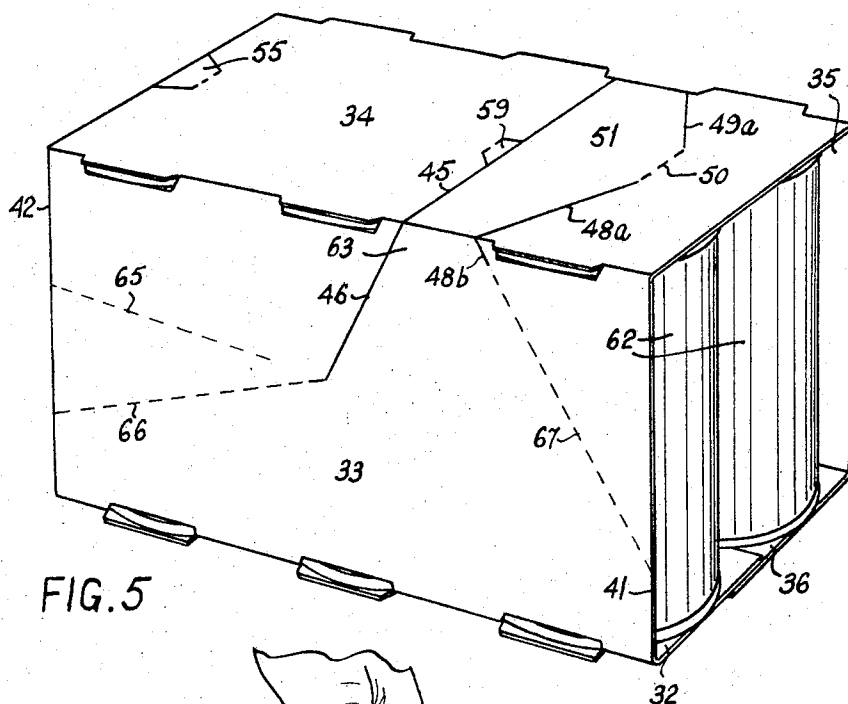


FIG. 5

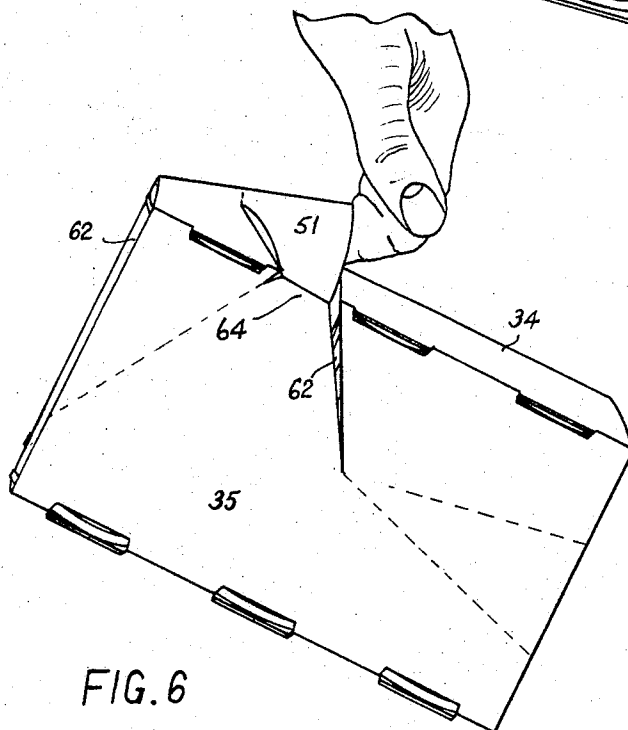


FIG. 6

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3,353,709

CARRIERS MADE FROM CARDBOARD OR SIMILAR MATERIALS

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8 Claims. (Cl. 220—112)

ABSTRACT OF THE DISCLOSURE

A blank of sheet material intended for making wrap-around article-carriers, and wrap-around carriers made from such a blank, which include an integral lifting handle which, in use, has portions which enter into the spaces between adjacent articles in the carrier, whereby the risk of tearing of the handle in the regions where it is connected to the blank is considerably reduced.

This invention relates to a carrier of the kind made from a blank of suitable material, for example cardboard, stiff paper or a suitable synthetic resin, and which can be employed for packaging goods both for storage and transit. Such carriers, which may be in the form of wrap-around carriers, are commonly employed for packaging articles having a circular cross-section, for example canned or bottled foods or beverages.

Wrap-around carriers of the aforementioned kind are known which comprise a blank of generally rectangular shape which is divided into a plurality of panels by fold lines disposed at right angles to the long sides of the blank. The short sides of the blank may be joined in overlapping relationship by any suitable means, for example staples, glue or other adhesive or by interengageable means, to form a carrier which can enclose one or more articles.

Usually, these hitherto known wrap-around carrier blanks are wrapped around a group of articles so that the short sides of the blank are joined at the bottom of the carrier and the top of the carrier is usually provided with finger-holes for lifting the carrier. Such finger-holes are satisfactory for a short period of time, but become rather uncomfortable for the user for a longer period of time.

The provision of a handle for lifting a carrier, while not essential, is of course a convenience for the user. But apart from this, from the selling point of view, it is known that customers tend to choose goods packaged in carriers with lifting handles when such goods are displayed among other goods in for example a self-service store.

An object of the present invention is to provide a carrier of the kind referred to which incorporates a lifting handle in a manner which is structurally strong and which is economical in material.

According to the invention a carrier of the kind referred to is formed from a blank having a plurality of end-to-end hingedly connected panels, one of the panels comprising a lifting handle member which extends into an adjacent panel.

The lifting handle member may be in the form of a strap defined by cut slits or perforations which are formed in said one panel and which extend into two adjacent panels disposed one on either side of said one panel.

It is not always preferable, however, to provide a distinct strap in the blank which is separate from, or separable from, the blank along both side edges of the strap.

The lifting handle member may be arranged equi-

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distantly between opposite side edges of the blank. In some cases, however, there is advantage in arranging the lifting handle member nearer to one side edge of the blank than the other.

According to a further feature of the invention a blank for making a carrier of the kind referred to comprises a plurality of end-to-end hingedly connected panels, one of the panels comprising a lifting handle member which extends into an adjacent panel.

The panels of said blank may be connected by folding lines formed in the blank in spaced parallel relationship. Thus the blank may comprise a panel intended to form the top panel of the carrier disposed between, and joined by two of said folding lines to, two panels intended to form side panels of the carrier. The blank may also comprise a lap panel at each end of the blank joined by two further folding lines to the ends of said side panels remote from the top panel, said lap panels being intended to form the bottom panel of the carrier.

The lifting handle member of the blank may be defined by a handle-defining cut line formed in the top panel and continued by extension cut lines formed in each side panel.

In the case of a blank intended to form a carrier for packaging a plurality of identical containers, the blank preferably comprises means for locating the containers in spaced parallel relationship with respect to said top and bottom panels. These locating means may be formed by container positioning slot defining cuts provided in said side panels adjacent to, and spaced apart along, said folding lines. In this case, said handle-defining cut line may pass across each folding line connecting a side panel to said top panel at a point spaced unequidistantly between two adjacent slot defining cuts formed in said side panel adjacent to said folding line.

Preferably the blank has at least one side edge disposed at right angles to said folding lines. In the case of a blank intended for packaging a plurality of identical right-circular cylindrical containers, said handle-defining cut line may be spaced from said side edge of the blank a distance greater than the diameter of the containers intended to be packaged in a carrier formed from the blank.

In a modified embodiment of a blank in accordance with the invention said lifting handle member may be defined by two strap-defining cut lines spaced apart transversely of the blank and formed in said top panel, each of said strap-defining cut lines having extension cut lines in said side panels.

The invention will now be described in greater detail, by way of example, with reference to the accompanying drawings, in which:

FIGURE 1 is a plan of a first embodiment of a carrier blank in accordance with the invention,

FIGURE 2 is a perspective view of the blank of FIGURE 1 wrapped around a group of four cans to form an assembled carrier,

FIGURE 3 is a perspective view of the assembled carrier of FIGURE 2 as it is held in the hand by means of the lifting strap,

FIGURE 4 is a plan of a second embodiment of a carrier blank in accordance with the invention,

FIGURE 5 is a perspective view of the blank of FIGURE 4 wrapped around a group of six cans to form an assembled carrier, and

FIGURE 6 is a perspective view of the assembled carrier of FIGURE 5 as it is held in the hand by means of the lifting handle.

In the drawings, cuts are shown with full lines, folding lines are shown by chain lines and tear lines are shown by dotted lines.

FIGURE 1 shows a rectangular blank, generally designated by the reference numeral 1, which is made of card-

board and which is intended to form a carrier for packaging four metal cans of circular cross-section in contact with one another and arranged in a group consisting of two pairs of cans, side-by-side. The blank 1 has a width equal to twice the rim diameter of the cans and consists of five end-to-end connected panels 2, 3, 4, 5 and 6 separated by four transverse folding lines 7, 8, 9 and 10 disposed at right angles to the long side edges 11, 12 of the blank. When the blank is folded to form the carrier shown in FIGURES 2 and 3, the panels 3 and 5 form the side panels of the carrier, the panel 4 forms the top panel of the carrier and the panels 2 and 6 lap partly over one another to provide the bottom panel of the carrier.

Each of the side panels 3, 5 has a length substantially equal to the length of the cans intended to be packaged in the assembled carrier. The top panel 4 has a length which is slightly less than twice the diameter of the body portion of the cans intended to be packaged in the assembled carrier.

Eight conventional can-positioning slits 13 are provided in the side panels adjacent to the folding lines 7-10. The central portion of each can positioning slit 13 is spaced from the adjacent transverse folding line by such a distance that the rim of a can is able to project through the slot formed by the can-positioning slit when the blank is folded about the transverse folding lines to form a carrier.

A lifting strap is disposed mid-way between the long side edges 11, 12 of the blank and is formed symmetrically in the top panel 4 and the side panels 3, 5 by two strap defining slits 14, 15. A parallel-sided central portion 16 of the strap, parallel with the long side edges of the blank, is formed in the top panel 4 and two end portions 17, 18 of the strap are formed in the side panels 3, 5, each of the end portions having diverging sides.

Two finger-hole-defining slits 19 connected by a short folding line 20 are formed in the top panel 4 at one side of the parallel-sided portion 16 of the lifting strap. The portion 21 between the slits 15, 19 can be depressed to form a hole enabling a finger to be introduced under the lifting strap to facilitate separation of the strap from the top panel.

Although each of the strap-defining slits 14, 15 is shown as being continuous, the lifting strap may, if desired, be defined by interrupted slits or perforations, so that the edges of the strap remain attached to the panels 3, 4, 5 of the assembled carrier, until it is desired to tear the edges of the strap from the panels of the carrier.

FIGURE 2 shows a blank similar to the blank of FIGURE 1 wrapped around a group of four cans 22 arranged in pairs, side-by-side, by folding of the panels 2-6 about the transverse folding lines 7-10. The lap panels 2 and 6 are overlapped underneath the bottom ends of the cans and stapled together. It will be appreciated that other securing means such as adhesive or interengageable parts formed in the panels 2 and 6 could be employed instead of staples. In this figure the rims 23 of the cans are seen projecting through holes 24 defined in the panel 3 by the slits 13.

FIGURE 3 shows the carrier of FIGURE 2 being lifted by means of the lifting strap. The end portions 17, 18 of the strap are moved inwardly towards each other into the spaces formed between adjacent cans 22. Furthermore, the diverging sides of the end portions 17, 18 thrust the top of each can somewhat outwardly of the carrier towards the open end of the carrier adjacent to said can. Both of these effects ensure that the strap can be held comfortably in the hand. Moreover, a certain locking effect on the cans, preventing movement of the cans within the carrier, is obtained by the tendency for the tops of the cans to move towards the open ends of the carrier.

Since the inward movement of the end portions 17, 18 of the lifting strap towards each other is limited by engagement of the end portions 17, 18 against the body portions of adjacent cans 22, the possibility of tearing of the

panels 3, 5 at the ends of the slits 14, 15 defining the lifting strap is minimised.

The end portions 17, 18 of the strap are disposed in relation to the parallel-sided portion 16 in such a way as to minimise the risk of tearing of the strap in the regions where the folding lines 8, 9 cross the strap. This is due to the inclination of the portion 16 in the regions where the folding lines 8, 9 cross the strap being such as to reduce to a minimum the thrust of the strap against the rims of the cans.

When the carrier is set down, for instance on a display shelf, the strap will move partly back to the position shown in FIGURE 2, but it will remain sufficiently above the top panel 4 to be readily identifiable to customers.

It will be appreciated that modified forms of the carrier shown in FIGURE 2, intended for packaging two or eight cans, may be made with a lifting strap formed equidistantly from the side edges of the carrier blank.

Tear lines 25, 26 for facilitating the removal of the cans 22 from the assembled carrier may be provided (optionally) without seriously affecting the strength of the carrier when it is lifted by means of the lifting strap 16, 17, 18. The portions 27 of the side panels 3, 5 between the folding lines 8, 9 and the ear lines 26 may be gripped at the side edge 12 of the carrier and pulled to tear the side panels 3, 5 sufficiently to remove two adjacent cans 22 from the carrier. Similarly, the tear lines 25 at the opposite side edge 11 of the carrier may be torn to remove the other two cans from the carrier. In this way, there is no need to turn the carrier over to separate the overlapping panels 2 and 6 and the cans are taken from the carrier the right way up.

FIGURE 4 shows a rectangular blank, generally designated by the reference numeral 31, which is made of cardboard and which is intended for packaging six metal cans of circular cross-section in contact with one another and arranged in a group consisting of three pairs of cans, side-by-side. The blank 31 has a width equal to three times the rim diameter of the cans and consists of five end-to-end connected panels 32, 33, 34, 35 and 36 separated by four transverse folding lines 37, 38, 39 and 40 disposed at right angles to the long side edges 41, 42 of the blank. When the blank is folded to form the carrier shown in FIGURES 5 and 6, the panels 33 and 35 form the side panels of the carrier, the panel 34 forms the top panel of the carrier and the panels 32 and 36 lap partly over one another to provide the bottom panel of the carrier.

Each of the side panels 33, 35 has a length substantially equal to the length of the cans intended to be packaged in the assembled carrier. The top panel 34 has a length which is slightly less than twice the diameter of the body portion of the cans intended to be packaged in the assembled carrier.

Twelve conventional can-positioning slits 43 are provided in the side panels adjacent to the transverse folding lines 37-40, these slits being similar to the slits 13 of the blank shown in FIGURE 1.

A lifting handle, defined by a single continuous slit 44, is formed in the top panel 34 and the side panels 33, 35. A straight portion 45 of this slit is formed in the top panel 34 and is disposed parallel with the long side edges 41, 42 of the blank and this portion of the slit in the top panel is extended into each of the side panels 33, 35 by straight slit portions 46, 47 each of which is disposed at an angle to the adjacent folding line 38, 39. Preferably, the portion 45 of the slit 44 is spaced from the side edge 41 of the blank a distance greater than the diameter of the cans it is intended to package in a carrier formed from the blank. The ends of the slit portions 46, 47 remote from the folding lines 38, 39, respectively, may be spaced from the side edge 41 a distance equal to at least one and a half times the diameter of said cans.

Between the slit 44 and the adjacent long side edge

41 of the blank, two separate continuous slits 48, 49 connected by a folding line 50 are formed in the top panel 34 and the side panels 33, 35, the folding line 50 being formed mid-way between the transverse folding lines 38, 39 and parallel with the long side edge 41 of the blank. Portions 48a, 49a of the slits 48, 49 are formed in the top panel 34 and diverge from the ends of the folding line 50 in the direction away from the side edge 41 of the blank. These portions of the slits 48, 49 are extended into the side panels 33, 35 by short portions 48b, 49b, respectively, which diverge from the slits 46, 47, respectively, in the direction away from the folding lines 38, 39 respectively.

The slits 44, 48, 49 and the folding line 50 define a lifting handle 51.

To facilitate removal of the assembled carrier from a bulk packing case, two finger-hole defining slits 52, 53 connected by a short folding line 54 are formed in the top panel 34 at the side edge 42 of the blank, so that the portion 55 between the slits 52, 53 may be depressed to enable a finger to be introduced under the top panel.

Two finger-hole defining slits 56, 57 connected by a short folding line 58 are formed in the top panel 34 at the side of the handle-defining slit 44 remote from the edge 41 of the blank, so that the portion 59 between the slits 56, 57 can be depressed to enable a finger to be introduced under the lifting handle 51 to facilitate separation of the handle from the top panel.

The lifting handle 51 may, if desired, be defined by interrupted slits or perforations in the place of the single continuous slit 44 and the pair of separate continuous slits 48, 49, so that the edges of the handle remain attached to the panels of the assembled carrier until it is desired to tear the edges of the handle from the carrier panels.

FIGURE 5 shows a blank similar to the blank of FIGURE 4 wrapped around a group of six cans 62 arranged in pairs side by side by folding of the panels 32-36 about the transverse folding lines 37-40. The panels 32 and 36 are overlapped underneath the bottom ends of the cans and stapled together. It will be appreciated that other securing means such as adhesive or interengageable parts formed in the panels 32 and 36 could be employed instead of staples.

FIGURE 6 shows the carrier of FIGURE 5 being lifted by means of the lifting handle 51. The end portions 63, 64 of the handle are moved inwardly a limited distance towards each other into the spaces formed between adjacent cans 62 in such a way that the handle can be held comfortably in the hand. The carrier is inclined to the vertical when held normally in the hand, owing to the fact that the lifting handle is not disposed mid-way between the side edges 41, 42.

Since the inward movement of the end portions 63, 64 of the lifting handle towards each other is limited by engagement of these portions with the cans 62, the possibility of tearing of the panels 33, 35 at the ends of the slits 46, 47, 48b and 49b is minimised.

Most of the weight of the cans in the carrier is taken up by the handle in the region of the latter along and adjacent to the slit 44. This region of the handle is well able to support this weight, because the end portions 63, 64 in this region are moved considerably inwardly towards each other into the spaces formed between adjacent cans and furthermore are moved somewhat in a direction towards the edge 41 of the blank. Both of these effects ensure that the portions of the handle in the regions of the transverse folding lines 38, 39 are positioned in relation to the rims of adjacent cans in such a way as to reduce to a minimum the possibility of tearing in these regions.

When the carrier is set down, for instance on a display shelf, the handle 51 will move partly back to the position shown in FIGURE 5, but it will remain sufficiently above the top panel 34 to be readily identifiable to customers.

If desired, the pair of separate slits 48, 49 formed in the top and side panels of the blank and the folding line 50 may be eliminated, so that the handle is defined by the slit 44 only.

It will be appreciated that a modified form of the carrier shown in FIGURE 5 intended for packaging three cans arranged in a single row, or eight cans arranged in pairs, can be made with a lifting handle formed between the first and second can-positioning slits 43, counted from a side edge 41 or 42, in the folding lines 38, 39, as in the above described carrier. But in the case of a modified carrier for ten cans arranged in pairs, the lifting handle may, if desired, be formed between the second and third can-positioning slits 43 in the folding lines 38, 39.

Tear lines 65, 66, 67, serving the same purpose as the tear lines 25, 26 of the blank of FIGURE 1, may be provided (optionally), without seriously affecting the strength of the carrier when it is lifted by means of the lifting handle 51.

In the case of necked containers being packaged in carriers of the type described above with reference to FIGURES 1 to 6, apertures may be provided in the top panel of the carrier to allow the necked portions of the containers to project therethrough.

The above described carrier blanks described with reference to FIGURES 1 and 4 use no more material than, and can be manufactured as easily as, hitherto known wrap-around carriers, and moreover can, if desired, be applied to a group of cans by existing machines.

Whilst carriers formed from specific blanks have been described in detail above, it must be appreciated that the invention is not limited to these blanks or to carriers formed from these blanks.

I claim:

1. A blank of sheet material for making a carrier intended for packaging articles having at least upper parts of circular cross-section, said blank being divided into a plurality of end-to-end connected panels by folding lines disposed substantially at right angles to the longitudinal axis of said blank, one of said panels comprising a strap handle defined by two spaced apart strap-defining slit means selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, which are formed in said one panel and which are continued by extension slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in a pair of panels disposed one on either side of, and connected by a pair of folding lines to, said one panel, the central portion of the lifting strap being disposed substantially centrally between two adjacent article positioning means formed at one folding line of said pair of folding lines and two adjacent article positioning means formed at the other folding line of said pair of folding lines, these four article positioning means being arranged substantially symmetrically with respect to said longitudinal axis of said blank and permitting lateral movement of said parts of said articles adjacent to said article positioning means when said articles are packaged in said carrier formed from said blank.

2. A blank of sheet material for making a wrap-around carrier divided into a plurality of end-to-end connected panels by folding lines disposed substantially at right angles to the longitudinal axis of said blank, one of said panels comprising a lifting strap defined by two spaced apart slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, which are formed in said one panel and which are continued by extension slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in a pair of said panels disposed one on either side of, and connected by a pair of folding lines to, said one panel, the central portion of said lifting strap being disposed substantially centrally between two adjacent article posi-

tioning slits formed at one folding line of said pair of folding lines and two adjacent article positioning slits formed at the other folding line of said pair of folding lines, these four article positioning slits being arranged substantially symmetrically with respect to longitudinal axis of said strap.

3. A wrap-around carrier comprising a blank of sheet material folded into a plurality of end-to-end connected panels along folding lines disposed substantially at right angles to the longitudinal axis of the blank, one of said panels comprising a lifting strap defined by two spaced apart slit means selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, which are formed in said one panel and which are continued by extension slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in a pair of said panels disposed one on either side of, and connected by a pair of said folding lines to, said one panel, the central portion of the lifting strap being disposed substantially centrally between two adjacent article positioning openings formed at one folding line of said pair of folding lines and two adjacent article positioning openings formed at the other folding line of said pair of folding lines, these four article positioning openings being arranged substantially symmetrically with respect to said longitudinal axis of said blank.

4. A blank of sheet material for making a carrier intended for packaging articles having at least upper parts of circular cross-section, said blank being divided into a plurality of end-to-end connected panels by folding lines disposed substantially at right angles to the longitudinal axis of said blank, one of said panels comprising a lifting strap which extends into a pair of said panels disposed one on either side of said one panel, said lifting strap being defined by a strap-defining slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in said one panel and continued by an extension slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in each of said pair of panels, the lifting strap being disposed substantially in a portion of said blank between said longitudinal axis of said blank and one side edge of said blank, the junction between each said extension slit means and said strap-defining slit means formed in said one panel being spaced from the longitudinal axis of said blank and disposed in said portion of said blank, at least parts of said extension slit means diverging from each other in the direction of the longitudinal axis of said blank.

5. A blank of sheet material for making a carrier intended for packaging articles having at least upper parts of circular cross-section, said blank being divided into a plurality of end-to-end connected panels by folding lines disposed substantially at right angles to the longitudinal axis of the blank, one of said panels comprising a lifting strap which extends into a pair of said panels disposed one on either side of said one panel, said lifting strap being defined by a strap defining slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in said one panel and continued by an extension slit means selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in each of said pair of panels, said lifting strap being disposed substantially in a portion of said blank between said longitudinal axis of said blank and one side edge of said blank, the junction between each said extension slit means and said strap-defining slit means formed in said one panel being spaced from said longitudinal axis of said blank and disposed in said portion of said blank, said strap-defining slit means being disposed nearer to said longitudinal axis of said blank than a pair of additional strap-defining slit means, selected from the group consisting of a continuous slit, a line of interrupted slits

and a line of perforations, formed in said one panel and continued respectively into said pair of panels.

6. A carrier containing at least one row of articles having at least upper parts of circular cross-section, said one row comprising one article which is disposed nearer to the center of the carrier than is an adjacent article, said carrier being formed from a blank of sheet material divided into a plurality of end-to-end connected panels by folding lines disposed substantially at right angles to longitudinal axis of said blank, one of said panels comprising a lifting strap which extends into a pair of panels disposed one on either side of, and connected by a pair of folding lines to, said one panel, said lifting strap being defined by a strap defining slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in said one panel and continued by an extension slit means, selected from the group consisting of a continuous slit, a line of interrupted slits and a line of perforations, formed in each of said pair of panels, the lifting strap being disposed substantially entirely in a portion of said blank between said longitudinal axis of said blank and one side edge of said blank, at least one of said extension slit means being disposed substantially between said one article and said adjacent article and disposed nearer to said one article than to said adjacent article.

7. A carrier as claimed in claim 6, in which the junctions between said extension slit means and said strap-defining slit means are disposed one on each of said pair of folding lines and spaced substantially equidistantly from said longitudinal axis of said blank, one of said extension slit means diverging from the other and extending towards and terminating closely adjacent the longitudinal axis of said blank.

8. A package comprising at least one row of articles in an erect position, said articles having at least upper parts of circular cross-section, and a carrier blank of sheet material wrapped around said articles, said blank being of one piece construction and having edges substantially parallel to its longitudinal axis and divided into a plurality of end-to-end connected panels by folding lines disposed substantially at right angles to said longitudinal axis, one of said panels constituting the upper part of said carrier, a pair of said panels disposed one on either side of and connected by a folding line to said one panel constituting side panels, said one panel having a lifting strap defined by at least two spaced apart strap-defining slit means formed in said one panel and continued by extension strap defining slit means formed in said side panels, at least parts of said extension slit means diverging from each other in the direction from said one panel to said side panel, two adjacent article positioning slits formed at each of said folding lines between said side panels and said one panel to receive and position said upper parts of the articles, the longitudinal axis of said lifting strap being disposed substantially centrally between said two adjacent article positioning slits formed at each of said folding lines, said article positioning slits positioning said articles relative to said extension slit means to permit movement of said extension strap between said articles.

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