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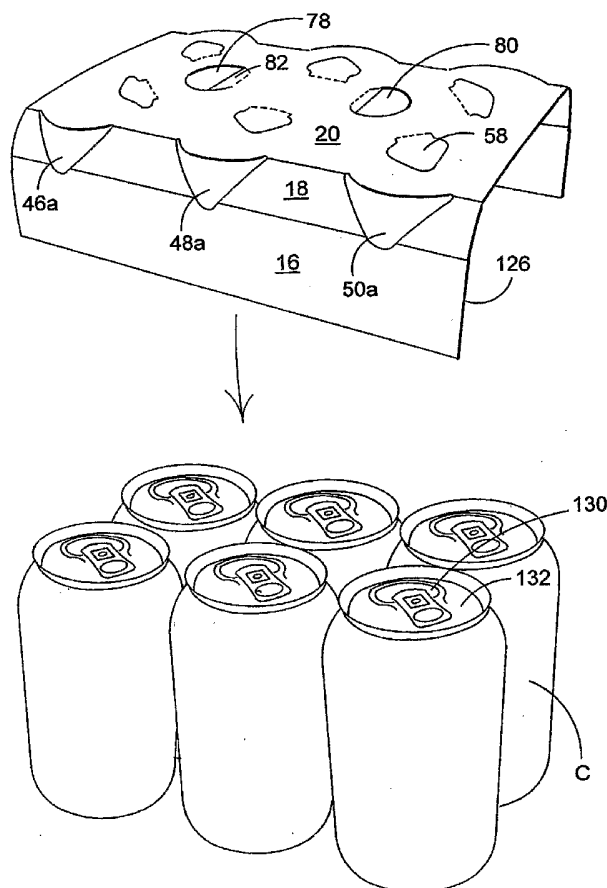
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- (54) Title:** ARTICLE CARRIER AND BLANK



(57) Abstract: A carrier for transporting an article (C) having a pour opening (130) comprises a top panel (20) for overlaying a dispensing face (132) of the article and an engaging tab (58) struck from and integrally formed with the top panel (20), said engaging tab (58) being insertable into a pour opening (130) of the article formed within the dispensing face (132), so as to detachably secure the article to the top panel (20). The carrier may form part of a secondary packaging structure for securing and transporting unopened articles.



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- 1 -

ARTICLE CARRIER AND BLANKBackground of the Invention

5 The present invention relates to a carrier and a blank for forming a carrier for transporting articles e.g. empty cans. More particularly, the invention relates to a carrier and blank for transporting empty beverage cans such as those which are returnable or recyclable. The carrier can therefore be employed for the return of empty cans to be deposited or recycled.

10 It is known to provide carriers for the collection and transportation of such empty cans.

In US 4,930,829 and US 4,778,210 granted to Paulson, there is disclosed a carrier for empty beverage cans comprising an elongate support member and a plurality of spaced apart hook members being adapted to enter the pour opening of an empty can and to engage the
15 underside of the top plate of the can to suspend the can therefrom.

US 4,236,638 to Griffith discloses a carrier for empty beverage cans comprising a flat body having compressible projections extending from the opposite sides thereof to be thrust through the opening of the empty cans.

20

In order to provide the consumer with purchasable beverages in a convenient manner, secondary packaging structures such as wraparound cartons or the like are used for packaging and transporting the cans containing the beverage. Furthermore, additional carriers may be employed for transporting the empty cans to a place where they can be recycled or deposited.

25 The need to conveniently transport empty cans is made greater by new deposit laws in certain countries.

It is therefore desirable to provide empty can carriers which can be applied to the empty cans in a quick and simple fashion thereby requiring minimal effort on the part of the user.

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There is further need in the art to provide empty can carriers which can be simply manufactured at low cost using the minimum quantity of materials.

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A problem with the carriers of the prior art is that they do not successfully fulfil the above requirements. The present invention therefore seeks to overcome or at least mitigate the problems of the prior art.

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Summary of the Invention

According to a first aspect of the present invention, there is provided a carrier for transporting an article having a pour opening e.g. an empty can comprising a top panel for overlaying a dispensing face of the article and an engaging tab struck from and integrally formed with the top panel, said engaging tab being insertable into a pour opening of the article formed within the dispensing face, so as to detachably secure the article to the top panel.

The engaging tab may be hingedly connected to the top panel such that it can adopt a first non-engagable position wherein the engaging tab is substantially planar to the top panel, and a second engagable position wherein the engaging tab is out of plane with the top panel.

The engaging tab may comprise a neck portion connected to the top panel, and a shoulder portion connected to the neck portion, said shoulder portion having a maximum width that exceeds the maximum width of a pour opening of an empty can to be secured to the carrier.

20

Preferably, at least one finger aperture is provided in the top panel, by which the carrier may be lifted. At least one finger tab may be provided by which the carrier can be gripped and lifted, said finger tab being struck from the top panel so as to define the finger aperture.

The carrier may form part of a secondary packaging structure such as a wraparound carton, for securing and transporting unopened cans.

The carrier may further comprise a pair of opposed side panels connected to opposed edges of the top panel and a base panel interconnecting lower edges of the side panels thereby forming a tubular structure.

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A series of corner panels may be provided connecting the side panels to the top and base panels.

5 The carrier may further comprise a separating means for separating the top panel from the base panel. The separating means may comprise a tear strip. The tear strip may be formed within and extend across each of the side panels.

10 According to a second aspect of the present invention there is provided a blank for forming a carrier for transporting both unopened and empty articles for dispensing liquids e.g. cans, the blank comprising a base wall panel, a first side wall panel, a top wall panel and a second side wall panel hingedly connected in series for forming a tubular structure, and an engaging tab struck from and integrally formed with the top panel, said engaging tab being insertable into a pour opening of the empty article so as to detachably secure the empty article to the top panel.

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A series of corner panels may be provided connecting the side wall panels to the top and base wall panels of the blank.

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The blank may further comprise a separating means for separating the top wall panel from the base wall panel. Said separating means may comprise a tear strip. The tear strip may be formed within and extend across each of the side wall panels.

Brief Description of the Drawings

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

FIGURE 1 is a plan view of a blank for folding a carton for transporting both unopened and empty cans, according to one embodiment of the present invention;

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FIGURE 2 is a perspective view of the carton formed from the blank of Figure 1;

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FIGURE 3 is a perspective view of the carton formed from the blank of Figure 1 at a stage of the procedure which separates the carton into an upper empty can carrier portion and a lower portion, allowing release of packaged cans contained therein;

5 FIGURES 4 and 5 are perspective views of the separated empty can carrier portion of the carton of Figure 3 during successive stages of its application onto a group of empty cans;

FIGURE 6 is a perspective view of a corner section of the empty can carrier of Figures 4 and 5 showing engagement of the carrier with an empty can; and

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FIGURE 7 is a cross section of the empty can carrier showing engagement of the carrier with the empty can.

Detailed Description of the Preferred Embodiment

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Referring to one embodiment of the invention as illustrated in Figures 1 to 6 and in particular Figure 1, there is illustrated a blank 10 of paperboard or like foldable sheet material for forming a wraparound carton for packaging beverage cans. There comprises a plurality of panels for forming a top wall, a base wall and opposed side walls. Preferably, there also exist
20 four separate beveled corner panels which bridge the top and base walls to the side walls. Of course, the presence of the corner panels is not limiting and in some embodiments, these panels can be dispensed with. In this embodiment, the blank 10 comprises in series a first base wall panel 12, first beveled corner panel 14, first side wall panel 16, second corner panel 18, a top wall panel 20, third corner panel 22, second side wall panel 24, fourth corner wall
25 panel 26 and second base wall panel 28. Each of the above panels is hingedly interconnected in series along fold lines 30, 32, 34, 36, 38, 40, 42 and 44 respectively.

There may further comprise one or more engaging tabs. In Figure 1 there is shown three opposed pairs of such tabs 58, 60; 62, 64 and 66, 68 which are struck from the top wall panel
30 20. The term 'struck from' as used herein in relation to the engaging tabs means that the tabs have been cut from a region of the top panel so as to define an aperture when the tab is positioned out of plane with the panel.

- 5 -

Each engaging tab is substantially identical and therefore only engaging tab 58 is described in further detail. The engaging tab 58 is struck from, and hingedly connected to top panel 20 by fold line 70 such that it can adopt a first non-engagable position wherein the engaging tab is substantially planar to the top panel, and a second engagable position wherein the engaging tab is out of plane with the top panel. The tab is defined by cut line 72 with each end of the cut lines being connected to fold line 70.

The engaging tabs may be configured such that their maximum width exceeds the maximum width of a pour opening of a can to be carried. For example, in this embodiment, engaging tab 58 comprises a broad shoulder portion 74 which extends from a narrower neck portion 76 connecting the tab to the top panel 20. It is envisaged that the shoulder portion but not the neck portion, has a maximum width greater than that of the pour opening of the empty can.

The blank may further comprise one or more finger apertures by which a carton formed from the blank may be carried. Figure 1 shows a pair of such apertures 78 and 80. Each finger aperture is substantially identical and thus only aperture 78 will be described in further detail.

There may further comprise a finger tab 82 hingedly connected to top panel 20 by fold line 84 and struck from the top panel so as to define the finger aperture. The tab is defined by cut line 86 with each end of cut line 86 being connected to fold line 84.

The blank according to the present invention may further comprise a means for separating the top wall panel from the base wall panels. For example, in Figure 1 is shown two separating means 88 and 90 which form tear strips within each opposing side panel wall 16 and 24 respectively. Both tear strips are substantially identical and therefore only tear strip 88 will be defined in further detail. Tear strip 88 is defined by a plurality of individual cut lines 92 which interrupt the continuity of side panel 16 and form frangible lines along which the strip can be torn from the remainder of the side panel.

There may further comprise one or more article retaining apertures. In Figure 1 there are shown six upper article retaining apertures, three of which 46a, 48a and 50a are struck from

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the second corner panel 18 whilst the remaining three 46b, 48b and 50b are struck from the third corner panel 22.

In this embodiment, the blank 10 further comprises six lower article retaining apertures.

5 Three of these apertures 52a, 54a and 56a are struck from regions of blank 10 which extend across base panel 12, first corner panel 14 and first side panel 16, so as to interrupt fold lines 30 and 32. Similarly, the other three lower article retaining apertures 52b, 54b and 56b are struck from regions of blank 10 which extend across base panel 28, fourth corner panel 26 and second side panel 24 so as to interrupt fold lines 42 and 44. Of course, the position or
10 dimensions of these lower apertures is non-limiting and in some, embodiments for example these apertures may be struck from the first and fourth corner panels only rather than extending into adjacent side and base panels.

In Figure 1, the blank 10 additionally comprises complementary pairs of securing tabs 94, 96;
15 98, 100; 102, 104; 106, 108; 110, 112; and 114, 116 struck from base wall panels 12 and 28.

It is envisaged that the carton of the presently described embodiment of the invention is formed by a series of sequential folding and attachment operations in which the two base panels 12 and 28 become connected so as to form the base wall of the carton. Attachment and securing of the base panels may be achieved by engagement of complementary pairs of
20 securing tabs, 94 to 116. Of course, the method by which the carton is formed is not limiting. For example, attachment of base panels 12 and 28 may equally or additionally occur by a series of gluing operations.

Following folding and attachment operations the carton is formed in a fully set up and loaded
25 condition as illustrated in Figure 2. In this condition it can be seen that the opposing top 20 and base 12, 28 walls are maintained substantially parallel to each other by means of the opposing side walls 16, 24 that interconnect the top and base walls to form an open-ended tubular structure.

30 The carton contains and secures one or more cans C by positioning sections of the cans' top and base rims 118 and 120 in the upper and lower article retaining apertures 50a and 56a respectively. The other article retaining apertures described above can be similarly employed.

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As can be seen from Figure 2, the top panel 20 is positioned such that it substantially overlays the dispensing faces of the cans. Finger apertures 78 and 80 together with their respective finger tabs 82, allow for the loaded carton to be conveniently manually lifted and transported.

5 In this loaded condition, the engaging tabs 58, struck from top panel 20 remain disengaged from the cans and substantially planar to the top panel.

To separate the carton from its contents the separating means 88 can be employed as illustrated in Figure 3. The tear strip 88 which forms part of side wall 16 can be separated

10 from the remaining portions of the side wall by peeling the strip in a direction indicated by the arrow such that it is torn along frangible lines 122 and 124 which follow the pattern of the array of cut lines 92. The counterpart tear strip 90 on opposing side wall 24 (not shown) can be similarly removed. The result is that the carton is separated into upper and lower portions 126 and 128. The upper portion 126 can be subsequently used to carry empty cans while the

15 lower portion 128 can be discarded. The upper carrier portion 126 and the lower portion 128 comprise top 20 and base 12, 28 panel walls respectively. Separation thus allows release of packaged cans and converts the carton into the empty-can carrier 126. The can carrier or upper carrier portion 126 of the carton can be retained for use as a carrier of empty cans once the cans' contents have been consumed.

20 Figures 4 and 5 illustrates how the carrier portion 126 may be applied to one or more empty cans C. It is envisaged that the upper panel is be placed over the empty cans such that it adopts a substantially identical orientation as it did when it comprised part of the wrap around tubular carton, packaging the full cans. Thus, the top panel is positioned onto the empty cans

25 such that it substantially faces the dispensing faces 132 of the cans. As can be seen from Figure 5, sections of the cans' upper rims 118 may extend through the article retaining apertures 46a, 48a and 50a respectively. The counterpart upper article retaining apertures on the opposing third corner panel 22 (not shown) may be similarly employed.

30 To secure the empty cans to the upper carrier portion 126, engaging tabs 58, 60, 62, 64, 66 and 68 are used as illustrated in Figure 6 and Figure 7. Since the mode by which the gripping

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tabs are employed is substantially the same for each tab, only the securing configuration of gripping tab 58 will be described here in further detail.

For use, the upper carrier portion 126 is positioned over the empty cans C such that the gripping tab 58 is in line with pour opening 130 of the empty can. The tab can then be folded along fold line 70 out of the plane of the top panel and in a direction towards the can, such that at least a portion of the tab passes through the aperture of the pour opening 130. The shape of tab is such that as it passes through the pour opening it detachably secures the can to the top panel 20. In this particular embodiment, the tab 58 comprises both a neck portion 76 and a broader shoulder portion joined to an end of the neck portion remote from the top panel; the shoulder portion being of a greater maximum width than the maximum width of the pour opening 130. While the neck portion connects the shoulder portion to the top panel, the shoulder portion itself extends through the pour opening and engages the underside of the rim 134 or the underside of the can's dispensing face 132 thereby securing the empty can to the carrier.

All references to directions are to be understood as if the blank and articles are in an upright state. It will however be recognized that as used herein, directional references such as "top", "base", "end", "side", "upper", "lower", "inner" and "outer" do not limit the respective panels to such orientation, but merely serve to distinguish these panels from one another. Any reference to hinged connection should not be construed as necessarily referring to a single fold line only: indeed it is envisaged that hinged connection can be formed from one or more of one of the following, a score line, a frangible line, or a fold line, without departing from the scope of the invention.

25

It should be understood that numerous changes may be made within the scope of the invention. For example, the carton and upper carrier may be adapted to accommodate a single can or more than one can. The number and dimensions of the engaging tabs may be adapted according to the number of cans to be carried, the pour opening size, and the mode of engagement employed by the tab. For example, in the embodiment described above, the tabs are configured with broad shoulder portions which engage the underside of the can's dispensing face or rim thereby securing the can to the carrier. However, the gripping tabs

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may be of any alternative dimension (i.e. such as a hooked configuration) which allows them to secure the can to the carrier by passing through the pour opening of the empty can.

5 The size and shape of the apertures and panels may be adjusted according to the particular requirements of the articles to be packaged and other known article retention devices apart from those article retention apertures described herein may equally be employed. Similarly, other separating means beside the tear strips 88 and 90 may alternatively be used. For example, the cut lines 92 defining the tear strip 88 described herein are not limited to having any particular configuration. It is enough that these lines are frangible thus allowing the top
10 and base walls to be separated for the release of the packaged cans.

The present invention and its preferred embodiments relate to a carrier configured to secure and transport empty cans to be deposited and/or recycled. As described above, the carrier may form part of an original secondary packaging structure such as a wraparound carton used
15 for the containment of the unopened cans prior to consumption of their contents. Alternatively, the carrier can be presented as an insert to a separate secondary packaging structure such as a wraparound carton or shrink film pack. Thus, it is anticipated the invention can be applied to a variety of carton or tray types and not limited to those of the wraparound sort. The shape of the blank minimizes the amount of paperboard required for
20 the carrier.

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CLAIMS

1. A carrier for transporting an article having a pour opening comprising a top panel for overlaying a dispensing face of the article and an engaging tab struck from and integrally formed with the top panel, said engaging tab being insertable into a pour opening of the article formed within the dispensing face, so as to detachably secure the article to the top panel.

2. A carrier as claimed in claim 1 wherein the article is an empty can.

3. A carrier as claimed in claim 1 or claim 2 wherein the engaging tab is hingedly connected to the top panel such that it can adopt a first non-engagable position wherein the engaging tab is substantially planar to the top panel, and a second engagable position wherein the engaging tab is out of plane with the top panel.

4. A carrier as claimed in any preceding claim wherein the engaging tab comprises a neck portion connected to the top panel, and a shoulder portion connected to the neck portion, said shoulder portion having a maximum width that exceeds the maximum width of a pour opening of an article to be secured to the carrier.

5. A carrier as claimed in any preceding claim wherein at least one finger aperture is provided in the top panel, by which the carrier may be lifted.

6. A carrier as claimed in claim 5 wherein at least one finger tab is provided by which the carrier can be gripped and lifted, said finger tab being struck from the top panel so as to define the finger aperture.

7. A carrier as claimed in any preceding claim wherein said carrier forms part of a secondary packaging structure such as a wraparound carton, for securing and transporting unopened articles.

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8. A carrier as claimed in claim 7 further comprising a pair of opposed side panels connected to opposed edges of the top panel and a base panel interconnecting lower edges of the side panels thereby forming a tubular structure.

5 9. A carrier as claimed in claim 8 wherein a series of corner panels are provided connecting the side panels to the top and base panels.

10. A carrier as claimed in claim 8 further comprising a separating means for separating the top panel from the base panel.

10

11. A carrier as claimed in claim 9 wherein said separating means comprises a tear strip.

12. A carrier as claimed in claim 10 wherein the tear strip is formed within and extends across each of the side panels.

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13. A blank for forming a carrier for transporting both unopened and empty articles for dispensing liquids, the blank comprising a base wall panel, a first side wall panel, a top wall panel and a second side wall panel hingedly connected in series for forming a tubular structure, and an engaging tab struck from and integrally formed with the top panel, said
20 engaging tab being insertable into a pour opening of the empty article so as to detachably secure the empty article to the top panel.

14. A blank as claimed in claim 13 wherein a series of corner panels are provided connecting the side wall panels to the top and base wall panels.

25

15. A blank as claimed in claim 13 or claim 14 wherein the blank further comprises a separating means for separating the top wall panel from the base wall panel.

16. A blank as claimed in any one of claims 13 to 15 wherein said separating means
30 comprises a tear strip.

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17. A blank as claimed in any one of claims 13 to 16 wherein the tear strip is formed within and extends across each of the side wall panels.

18. A blank as claimed in any one of claims 14 to 18 wherein the article is a can.

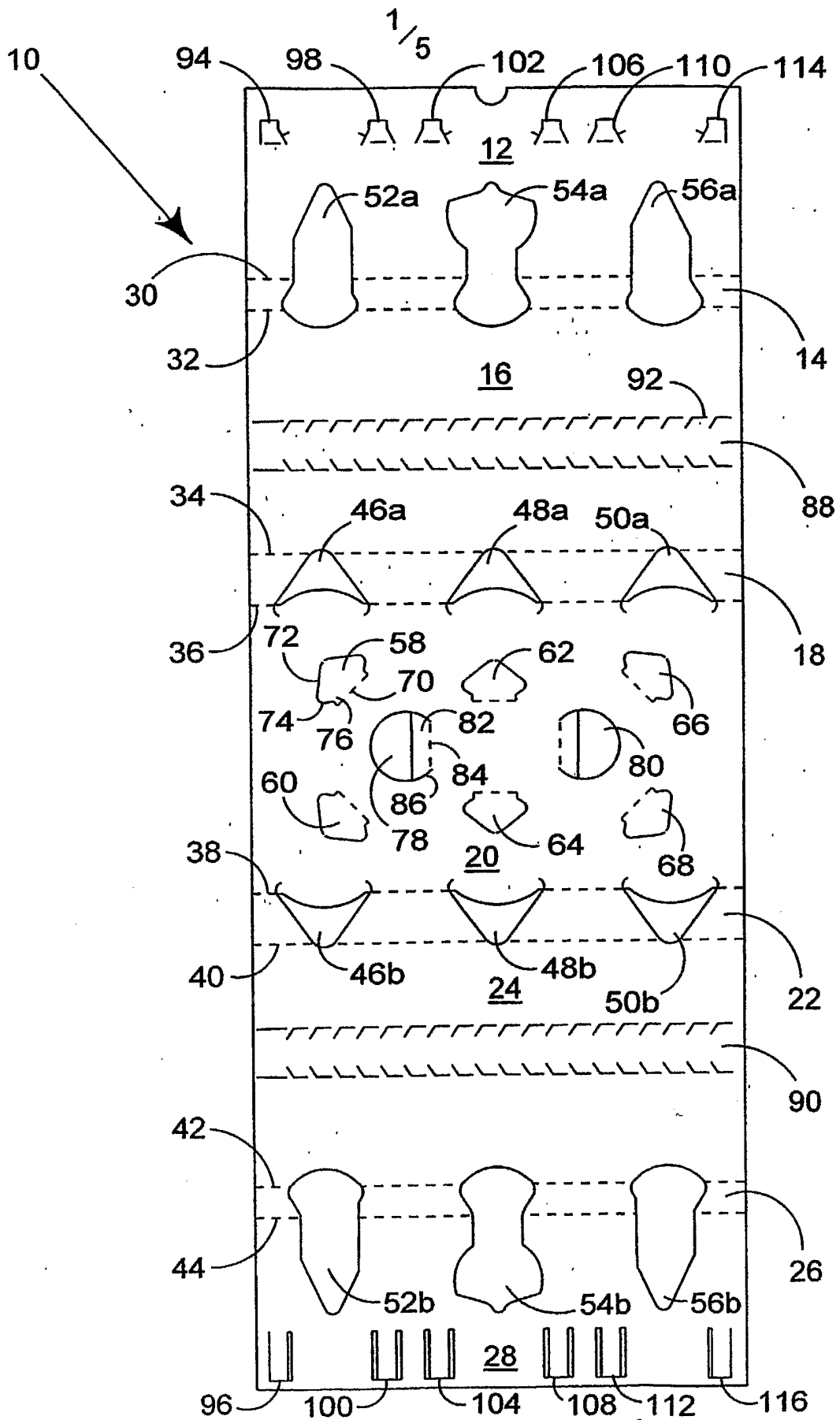


FIGURE 1

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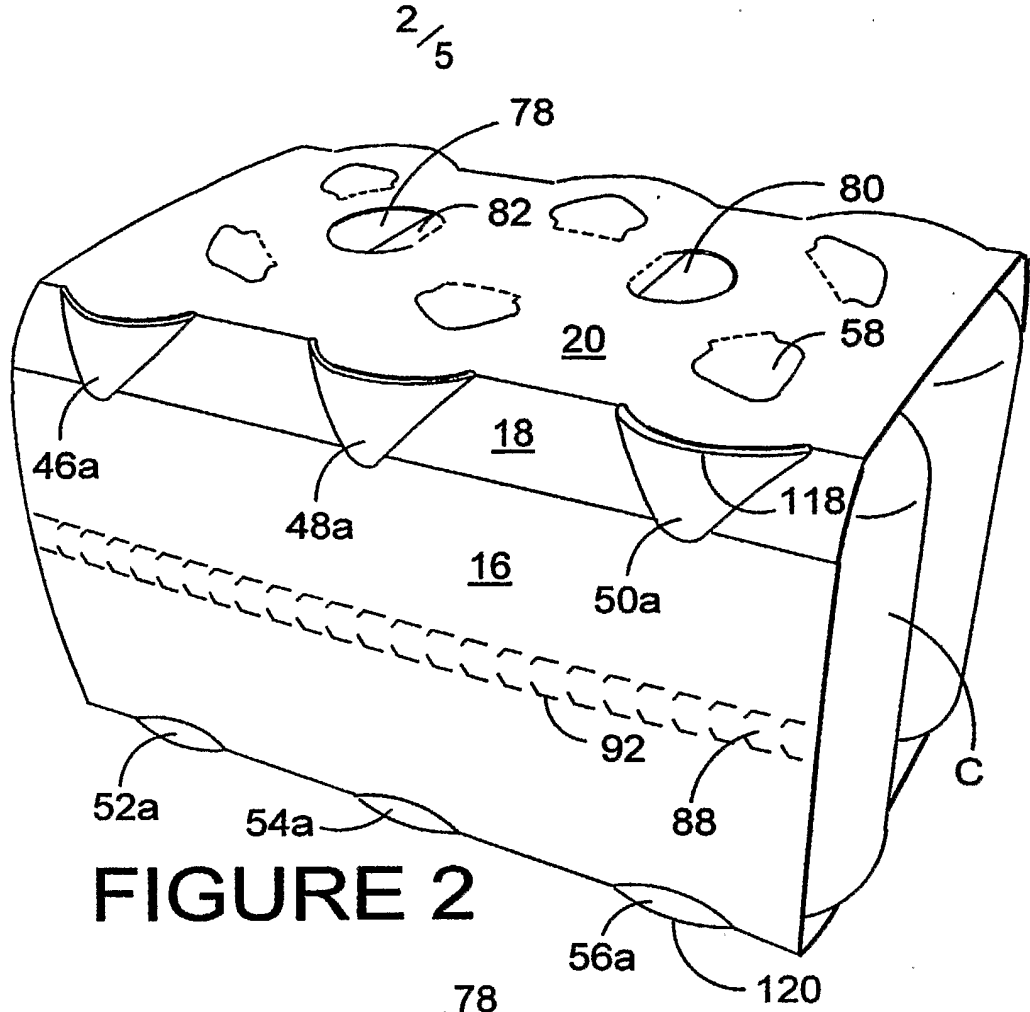


FIGURE 2

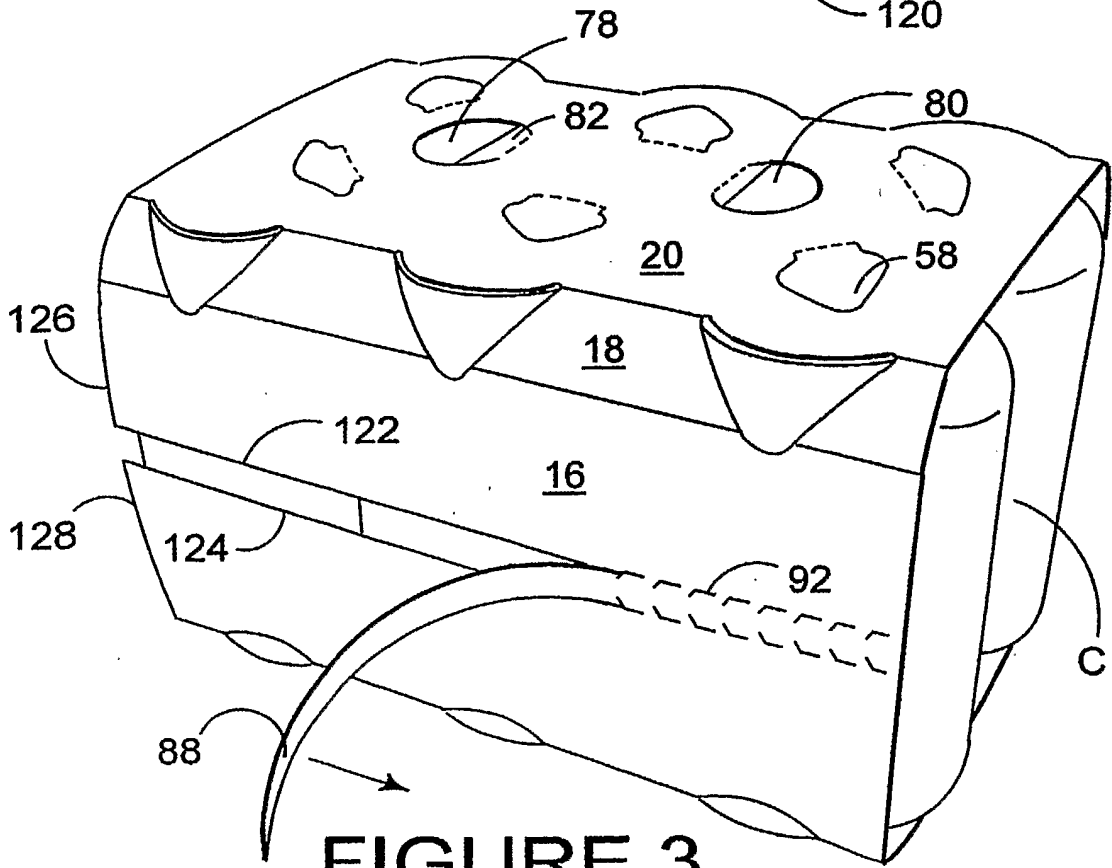


FIGURE 3

SUBSTITUTE SHEET (RULE 26)

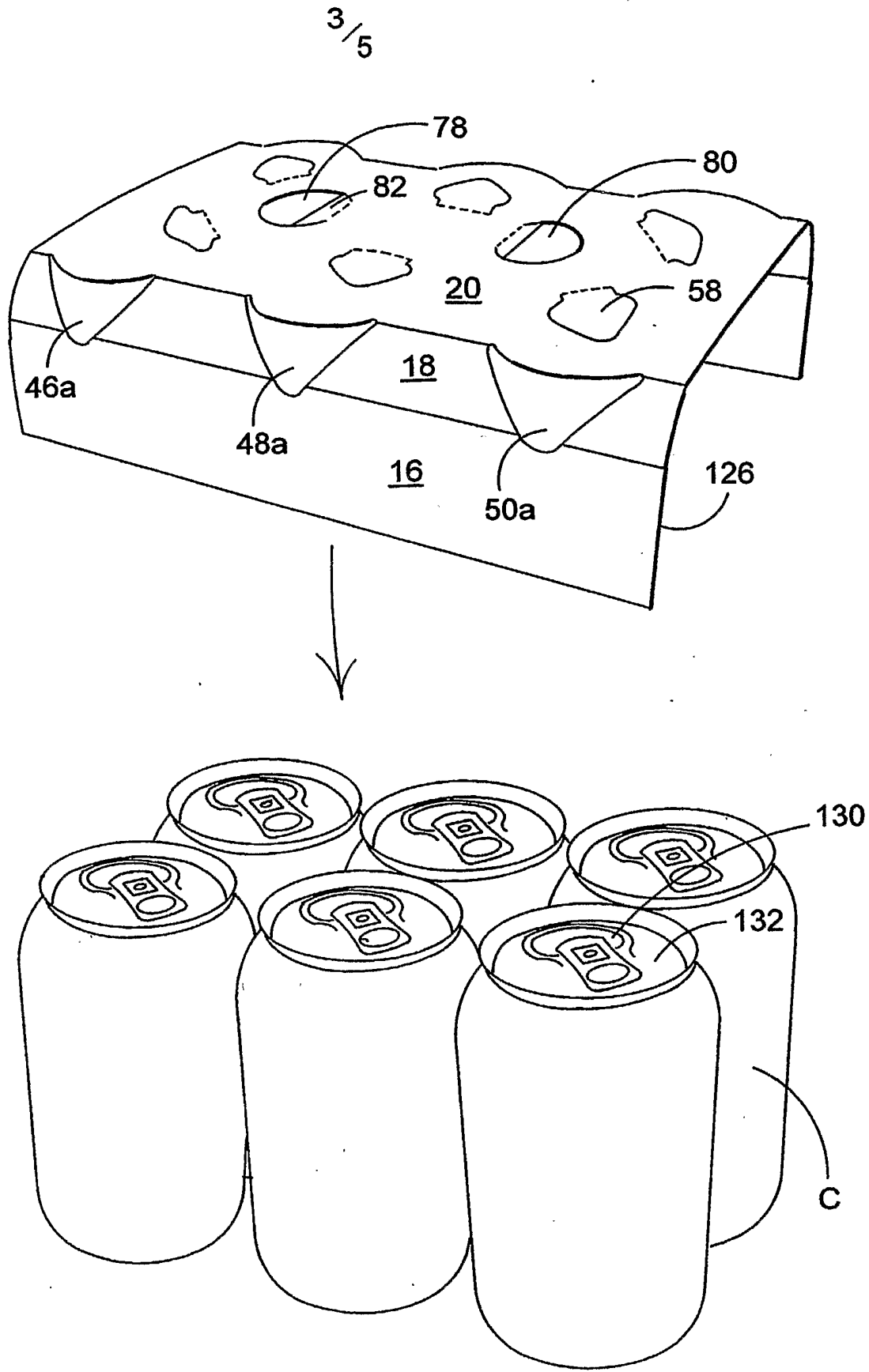
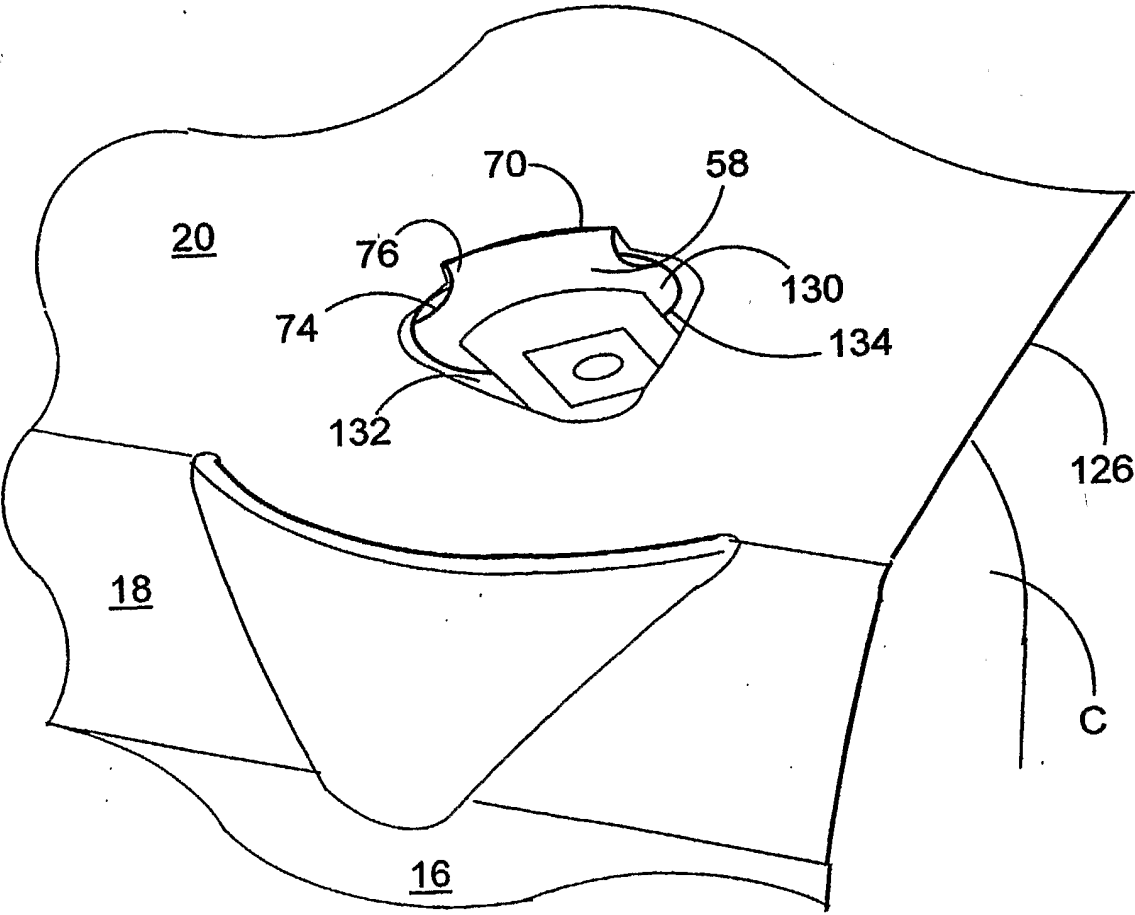
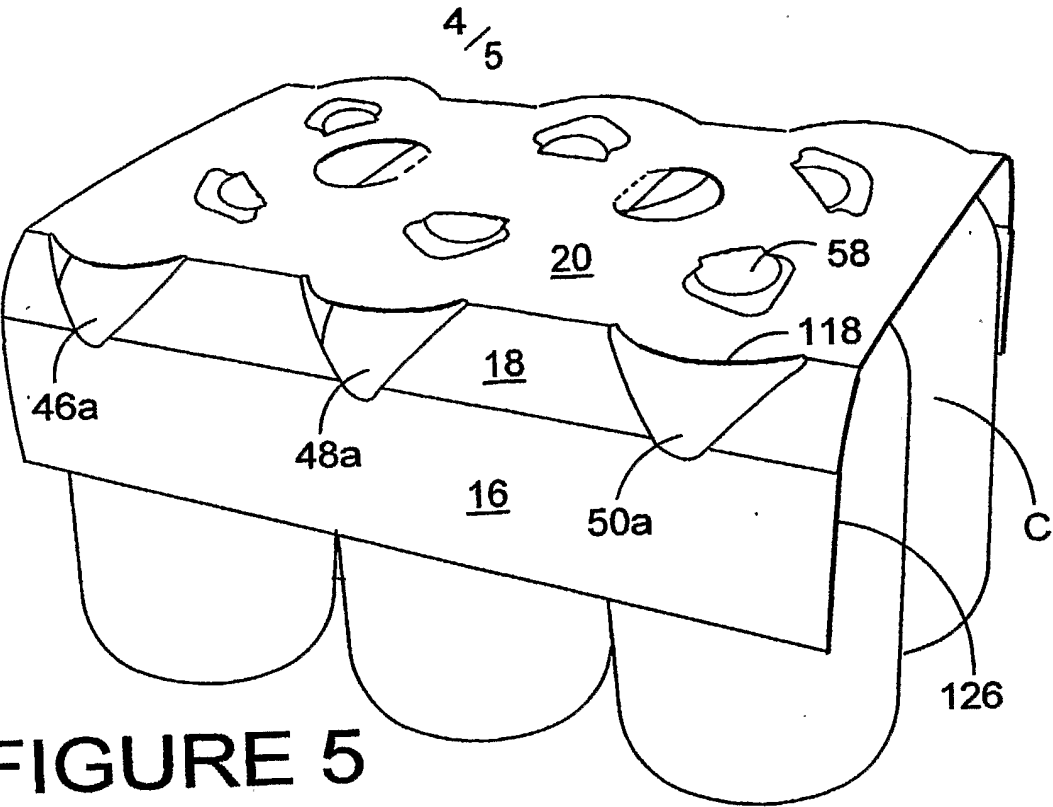


FIGURE 4



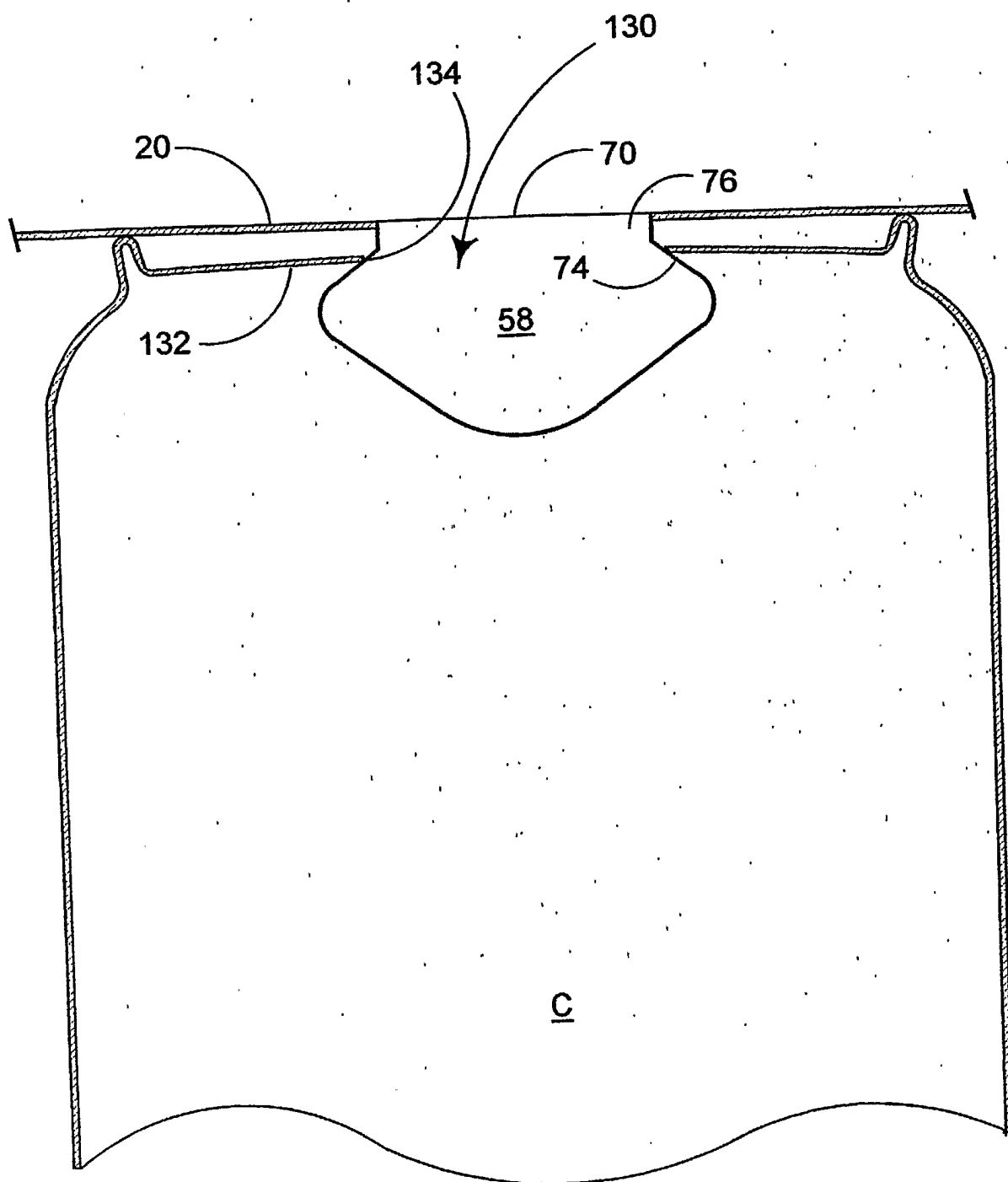
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FIGURE 7

SUBSTITUTE SHEET (RULE 26)

INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D71/00 B65D71/42

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

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	----- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/US2004/018715

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 930 829 A (PAULSON J RENE) 5 June 1990 (1990-06-05) cited in the application claim 1; figure 1 -----	1

INTERNATIONAL SEARCH REPORT

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