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(54) **A CARRIER FOR CANS AND A CARDBOARD BLANK FOR A CARRIER FOR CANS**

TRÄGER FÜR DOSEN UND KARTONZUSCHNITT FÜR EINEN TRÄGER FÜR DOSEN

CARTON PORTE-CANETTES ET EBAUCHE EN CARTON POUR SA REALISATION

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(73) Proprietor: **Smurfit Kappa Packaging Aktiebolag**
55115 Jönköping (SE)

(72) Inventor: **Karlsson, Kenneth**
S-388 99 Påryd (SE)

(74) Representative: **Nyberg, Bengt et al**
DR. LUDWIG BRANN PATENTBYRA AB,
P.O. Box 17192
104 62 Stockholm (SE)

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Description

Field of the invention

[0001] The present invention relates to a carrier of cardboard, preferably corrugated cardboard, for connecting a plurality of generally cylindrical cans being disposed in one or several rows and having an inclined upper part and a top closure with a projecting circular rim. The carrier is produced from a plane blank, having, for each can to be connected by the carrier, two mutually opposing, essentially arcuate slits, the outer edges of which engage below the rim of the cans when the carrier is assembled on the plurality of cans to connect the carrier and the cans and form a package assembly.

[0002] The invention also relates to a plane blank of cardboard for a carrier for cans.

Background of the invention

[0003] Cylindrical cans are used in the beverage industries for drinks, such as for instance mineral water, bear and soft drinks. For carrying a plurality of cans, package assemblies are provided, which may comprise from two up to ten cans. Heretofore there have been many different types of package assembly means provided for enabling a plurality of cans to be lifted and handled by, for example, a consumer.

[0004] Plastic materials are used as package assembly means, e.g. in the form of a plastic film wrap extending around the packaged cans or in the form of mutually connected plastic rings which are applied around the cans. These package assembly means, however, are costly and cause environmental problems. Other types of carriers for cans, made of cardboard, having both environmental and commercial advantages, have thus been introduced. Also combinations of plastic and cardboard materials have been used as package assembly means.

[0005] Considering the extensive use of package assemblies for drinks and the great quantity of cans sold in these packages or assemblies, the cost of the individual package, including material as well as assembly costs, is an important factor in the cost of the packaged assembly as sold. Hence, relatively small changes in the costs of the package assemblies are very important. In addition, it is important that the contents of the packages are clearly visible and can be identified in the package assembly.

[0006] One type of carrier of cardboard configured as a banderole or a so called wrap-around extending around the group of cans are frequently used and is, for example, disclosed in US-A-3,194,476. This wrap-around carrier is costly and also complicated to apply around the cans in a continuously running production line. A further disadvantage is that the contents of the package can not easily be identified by the consumer.

[0007] Other types of carriers of cardboard are known, which are adapted to be applied against the upper side of the group of containers and to be connected to the containers. A carrier of this type is described, for example, in US-A-3,094,210. The carrier is produced from a plane cardboard blank having two opposing U-shaped slits for each container to be connected by the carrier. The plane blank is assembled on the group of containers by folding side flanges downwardly towards the sides of the container, such that outer edges of the slits in the carrier engage below the shoulder of the containers. However, in order to prevent the edges of the slits to disengage from the shoulder, following mutual movements between the containers, an additional corresponding carrier must be applied on the bottom part of the containers. The carrier as described above is disadvantageous in that it can be used for a single row of containers only and is costly due to material costs and a more complicated assembly of a two-piece carrier. A further disadvantage is that the side flanges of the carrier projecting downwardly along the sides of the containers, may easily get caught by an adjacent package assembly or some other element, such that the flanges are forced upwardly and the edges of the slits are disengaged from the shoulder of the container.

[0008] A similar carrier for cans is disclosed in EP-B-0496807. The carrier comprises two opposing arcuate slits for each can and short incisions extending radially from said slits. A plurality of flaps, formed between the incisions, engage below the projecting neck of the cans. Grasping flaps are provided on each side of the carrier adapted to be folded when the carrier with the cans is grasped and lifted by the user. The carrier as disclosed has proven insufficient to securely engage the carrier on the cans, especially when lifting forces are applied in the gripping recesses in the sides of the carrier. The carrier has a centrally arranged folding line, which serves as a "hinge " when lifting forces are applied in the gripping recesses in the opposing sides of the carrier, such that the cans are separated and tend to disengage from the carrier. In addition, the side flaps are forced, by the lifting forces, in an upward direction, thus further increasing the risk for disengagement of the carrier from the cans.

Basic idea of the invention

[0009] The object of the present invention is to solve the above-mentioned problems by providing a carrier for cans, which may be securely fitted to the cans in order to connect, lock and support the cans and provide a package assembly

which may be lifted and handled without risking disengagement, and which is material-effective and may be readily and effectively applied to and assembled on a plurality of cans.

[0010] This object is achieved in accordance with the invention in a carrier for cans and a cardboard blank for a carrier for cans as described above and with the characterising features as defined in the appended claims.

[0011] According to the invention, the opposing arcuate slits for each can to be connected by the carrier, comprise an arcuate intermediate section between two arcuate end sections, said intermediate section of the slit being formed radially inside the arcuate end sections of the slit, such that a radially projecting arcuate engagement tongue is formed in the intermediate section of the slit. The tongue is adapted to slip over the rim of the can when the side panels and possibly the centre portion of the blank are forced in a downward direction towards the inclined sides of the can, and to snap in below the rim of the can to securely connect the carrier to the cans. The can is securely tightened in the carrier by the tightening forces ensuing from the contact pressure of the carrier on the top closure of the can arising when the engagement tongue snaps in below and bear on the rim of the can. The curvature of the engagement tongue thoroughly follows the curvature of the can and through the deflection of the end sections of the slits and the ensuing tension in these sections effected by the contact pressure on the top closure, the engagement tongues are tightened and provides a secure and steady connection.

[0012] The foregoing and other objects and advantages of the invention will be made more apparent in the following description of embodiments of the invention and in the appended drawings.

Short description of the drawings

[0013] The invention will be described more in detail below with reference to the appended drawings, in which

Figure 1 shows a plane cardboard blank for a carrier for cans according to a first embodiment of the invention, said carrier being adapted for one row of cans with two cans,

Figure 2 shows in a perspective view a package assembly comprising a carrier with two cans, the carrier being produced from the cardboard blank of Figure 1,

Figure 3 shows a plane cardboard blank for a carrier for cans according to a second embodiment of the invention, said carrier being adapted for two rows of cans with six cans, and

Figure 4 shows in a perspective view a package assembly comprising a carrier with six cans, the carrier being produced from the cardboard blank of Figure 3.

Detailed description of embodiments of the invention

[0014] The carrier according to the invention is produced from a plane blank of cardboard, preferably corrugated cardboard. A thin and compact F-flute corrugated cardboard is preferably used. However, a thicker E-flute corrugated cardboard may also constitute a suitable material in the carrier. In order to minimise the humidity effect on the material, the corrugated cardboard may be coated with a plastic layer, preferably on its inner side. Besides that the plastic layer increases the resistance of the material against moisture, the layer also increases the ductility of the material. The advantages of the environment friendly corrugated cardboard remain also with a plastic coating, since the plastic material in the coated layer may be recycled.

[0015] Figure 1 shows the plane blank 2 for a carrier according to a first preferred embodiment of the invention. The carrier is adapted to hold and connect a plurality of cans disposed in a single row, in the embodiment as shown, a row of two cans. Figure 2 shows the carrier 1 produced from the blank 2 of Figure 1 and assembled on the plurality of cans 4. The cans 4, which do not form part of the present invention, are conventionally designed with an essentially circular-cylindrical basic form. The upper part of the can is slightly inclined and is closed by a top closure 6 which is sealed by means of a circular projecting rim 8.

[0016] The plane blank 2 in Figure 1 has an essentially rectangular basic form, preferably with dented or inclined corners 10 for reducing the risk that a projecting part of the carrier may get caught by an adjacent element, such as for example another package assembly of cans. Two centrally disposed gripping recesses 12, forming a finger grip for two fingers, are provided on the long sides 26 of the blank. The carrier 1 and the cans 4, forming a package assembly as shown in Figure 2, may simply be lifted by a two finger grip in the recesses 12.

[0017] Two mutually opposing and essentially arcuate slits 14 are disposed in the blank 2 for each can 4 to be connected by the carrier. The arcuate slit 14 comprises an arcuate intermediate section 16 having arcuate end sections 18 on both sides thereof. Step-like portions 20 are disposed between the intermediate section 16 and the end sections 18. The arcuate end sections 18 are part circular, the radius of which is equal to or slightly larger than the radius of the projecting rim 8 of the top closure 6 on the can, such that the end sections 18 are in line with or project slightly outside the edge of the shoulder 8 in the assembled state as shown in Figure 2. The outer edge of the slit 14 may thus, along the end sections 18, easily be displaced downwardly past the rim 8, as will be explained more in detail below.

[0018] The arcuate intermediate section 16 of the slit 14 is formed radially inside the arcuate end sections 18 of the slit, such that the intermediate section forms an arc inside the arched line formed by the extensions of the two end sections 18. The outer edge of the intermediate section 16 of the slit 14, thus forms a projecting engagement tongue 22 directed towards the centre of the blank. As mentioned above, the engagement tongue 22 is arched and may be part circular, the curvature of which corresponding to the curvature of the can just below the rim. The engagement tongue 22 may also be differently arched, for example, the arc may be part circular and "wider". Hence, this engagement tongue 22 has a larger radius and a centre which does not coincide with the centre of the cans in the assembled state of the carrier. The engagement tongue 22 is adapted to snap in below the projecting rim 8 of the can 4 to connect and lock the can to the carrier, as will be described more in detail below.

[0019] Several longitudinal folding lines 24 are disposed in the blank 2, extending parallel with the long sides 26 of the blank and the row of cans. The folding lines 24 connect the ends of the arcuate slits 14 with each other or with an adjacent short side 28 of the blank.

[0020] In forming the carrier 1 as shown in Figure 2 from the plane blank 2 of Figure 1, the blank 2 is first superimposed on the top closures 6 of the cans, such that the slits 14 in the blank on the whole coincide with the projecting rims 8 of the cans. Side panels 30 in the blank 2, formed between the long sides 26 and the folding lines 24, are forced and thus folded downwardly towards the inclined surfaces of the cans. The outer edge of the slit 14 is thereby displaced downwardly and the projecting engagement tongue 22 is turned into a slightly upward direction. Hence, the arcuate end sections 18 of the slit 14 pass the outside of the projecting rim 8 of the top closure 6 and the engagement tongue 22 slips over the rim 8 and snaps in below said rim, such that the carrier is securely locked to the can by the tongue.

[0021] The arcuate engagement tongue 22 is formed to fit the cylindrical curvature of the can 4, such that the entire tongue 22 bears on the surface of the can below the rim 8 and exerts a tightening force ensuing from tensions distributed in the carrier along the outer edges of the end sections 18 of the slits from the contact pressure of the carrier 1 on the top closure 6, such that a secure and stable connection between the carrier and the cans is achieved. The package assembly is further stabilised by the panels 30 bearing on the inclined surfaces of the cans 4.

[0022] The width (along the short sides 28) of the plane blank 2 is approximately equal to the cylindrical diameter of the cans. In the assembled state, with the side panels 30 in an inclined position, the width of the carrier 1 is further reduced. Hence, in the assembled state, the edges of the carrier 1 do not exceed the maximum dimensions of the cans. As a consequence, the risk of an unintentional disengagement of the carrier from the cans due to upwardly directed forces on the side panels, is considerably reduced. The upper plane parts of the assembled carrier 1, cover the upper portions of the cans, i.e. the top closure 6, such that these portions are protected from contamination during transportation and storing.

[0023] Figure 3 shows the plane cardboard blank 32 for a carrier according to a second embodiment of the invention. The blank is adapted, in the assembled state, to connect and hold a plurality, i.e. six in the embodiment as shown, of cans 4 arranged in two rows. The blank 32 is shown in an assembled state in Figure 4 . The plane blank 32 has an essentially rectangular basic form, preferably with dented or inclined corners 10 as in the embodiment as shown in Figures 1 - 2. At least two gripping recesses 42, preferably configured as circular or oval openings, are centrally disposed in the blank between the rows of cans, forming a finger grip for two fingers in order to lift and handle the package assembly.

[0024] Two mutually opposing and essentially arcuate slits 44, 45 are disposed in the blank 32 for each can 4 to be connected by the carrier 31. Each pair of slits comprises an outer slit 44, corresponding in substance with the slits 14 in the embodiment as shown in Figures 1 and 2, and an inner slit 45 adjacent to the centre 34 of the blank between the rows of cans. The inner slit 45 differs from the outer slit 44, primarily in the configuration of the intermediate section 46, but also in that the arcuate end sections 48 are smaller than the corresponding end sections 18 in the outer slit 44. As a consequence, the intermediate section 46 of the inner slit is larger than the corresponding intermediate section 16 in the outer slit 44.

[0025] The intermediate section 46 of the inner slit 45 has at least one, in the embodiment as shown two, radially extending incisions 47. The incisions 47 extend between the edge of the slit 45 and an arcuate folding line 53, extending between the end sections 48 and delimiting an engagement tongue between the step-like portions 50. The incisions 47 divide the engagement tongue into three engagement flaps 52. The curvature of the intermediate section 46 of the slit 45 differs from the curvature of the arcuate folding line 53 in that it is wider and has a larger radius than the folding line 53. The arcuate folding line 53 has a curvature corresponding to the curvature of the contact line on the inclined surface of the can, as will be described more in detail below with reference to Figure 4.

[0026] As shown in Figure 3, a plurality of additional folding lines are disposed in the blank 32. Three longitudinal folding lines 54, for each row of cans, extend parallel to the long sides 56 of the blank and the rows of cans. Two of the three longitudinal folding lines 54 connect the ends of the arcuate slits 44, 45 with each other or with an adjacent short side 58 of the blank and the third folding line 54 connects the step-like portions 20 in the outer slits 44 with each other or with an adjacent short side 58 of the blank. In addition, a plurality of oblique folding lines 55 are disposed in the blank, said folding lines connecting the outer engagement flaps 52 with an adjacent gripping recess 42 or with an adjacent short side of the blank.

[0027] The plurality of cans 4, disposed in two rows, are connected and held together by the carrier 31 in a package assembly, as shown in Figure 4. In forming the carrier as shown in Figure 4 from the plane blank 32 of Figure 3, the plane blank is first superimposed on the rows of cans and then the side panels 60 on the long sides as well as the central portions of the blank are forced and thus folded in a downward direction, preferably by means of a specially designed pressure-applying tool. During this pressing procedure, the essentially circular parts of the blank between the slits 44, 45 bear on and cover the top closures 6 of the cans, while the side panels 60 and the central portions are forced downwardly. Through the downwardly directed pressure, the blank 32 is folded in the folding lines 54, 55. Hence, the side panels 60 are folded in two steps in the two longitudinal folding lines 54, whereby the arcuate outer edge of the outer slits 44 is displaced in a downward direction past the rim 8 of the can, in a corresponding manner as in Figure 2. The outermost part of the side panels 60 is additionally folded, such that the engagement tongue 22 slips over the rim 8 and snaps in below said rim into its locking position.

[0028] Between the rows of cans, centrally on the blank 32, a special designed tool applies pressure at certain points along the centre line 34 of the blank. The blank 32 is folded in the longitudinal inner folding line 54, such that the outer edges of the inner slits 45 are displaced in a downward direction past the rim 8 of the can. In addition, the blank 32 is folded in the oblique folding lines 55 and the arcuate folding lines 53. The downward pressure is applied, such that the arcuate folding lines 53 are forced against the inclined surfaces of the cans, and the engagement flaps 52 are folded upwardly to finally snap in below the rim 8 of the can into a locking position. The downward pressure is applied at certain portions of the blank between each pair of cans, thus forming bowl-shaped indentations between the oblique folding lines 55 and the arcuate folding lines 53.

[0029] When the carrier 31 of to Figure 4, with its heavy load of liquid-filled cans 4, is lifted by a two finger grip in the gripping recesses 42, the oblique folding lines 55 and especially the indentations formed therebetween in the carrier 31 prevent that the lifting forces, as in other previously known carriers, are transformed to a separation of and mutual movements between the cans, which may cause a disengagement of the cans from the carrier. According to the invention, the lifting forces are instead distributed in the direction of the oblique folding lines 55 and is transformed into an increased pressure of the engagement flaps 52 against the rim 8.

[0030] According to the invention, the blanks may effectively be assembled on the cans in an automated production line. The blanks may however also effectively be assembled in a semi-automated line or in a packaging line and it is also convenient to assemble the blank manually into a package assembly.

[0031] It will be understood that the invention is not restricted to the aforedescribed exemplifying embodiments thereof and that several conceivable modifications of the invention are possible within the scope of the following claims.

Claims

1. A carrier of cardboard, preferably corrugated cardboard, for connecting a plurality of generally cylindrical cans (4), being disposed in one or several rows and having an inclined upper part and a top closure (6) with a circular projecting rim (8), said carrier (1; 31) being produced from a plane blank (2; 32), having, for each can to be connected by the carrier, two mutually opposing, essentially arcuate slits (14; 44, 45), the outer edges of which engage below the rim (8) of the cans when the carrier is assembled on the plurality of cans to connect the carrier and the cans and form a package assembly,
characterised in that the essentially arcuate slits (14; 44, 45) comprise an arcuate intermediate section (16; 46) and arcuate end sections (18; 48) on both sides thereof, said intermediate section (16; 46) being formed radially inside the extended arcuate end sections (18; 48) such that an inwardly projecting engagement tongue (22; 52) is formed between the end sections (18; 48), said tongue being adapted to abut on and engage below the rim (3) to connect the carrier (1; 31) and the cans (4) to a package assembly.

2. A carrier according to claim 1, **characterised in that** the arcuate end sections (18; 48) are circular having a radius which is equal to or slightly larger than the radius of the circular rim (8).

3. A carrier according to claim 2, **characterised in that** the plane blank (2; 32) is essentially rectangular and that foldable panels (30; 60) are disposed in the blank, parallel with the long sides of the blank.

4. A carrier according to claim 3, **characterised in that** the panels (30; 60) are foldable in folding lines (24; 54), connecting the ends of the arcuate slits (14; 44, 45) with each other or with an adjacent side (28; 58) of the blank.

5. A carrier according to claim 4, **characterised in that** the outer edges of the carrier are disposed in line with or inside the maximum external dimensions of the group of cans (4) in the package assembly.

6. A carrier according to any of the preceding claims, **characterised in that** gripping recesses (12; 42), adapted to be gripped by fingers to lift and handle the package assembly, are disposed in the carrier blank.

7. A carrier according to claim 6, **characterised in that** the carrier is adapted to connect two or more cans (4) in one row, and that said gripping recesses (12) are centrally arranged in the sides (26) of the blank.

8. A carrier according to claim 6, **characterised in that** the carrier is adapted to connect two or more cans (4) in two rows, and that said gripping recesses (42) constitute openings, preferably circular or oval, centrally disposed between the rows of cans (4).

9. A carrier according to claim 8, **characterised in that** the inner arcuate slit (45) in each pair of opposing slits (44, 45) has an arcuate intermediate section (46) with a radius which is larger than the radius of the arcuate end sections (48).

10. A carrier according to claim 9, **characterised in that** the arcuate intermediate section (46) of said inner slit (45) forms a projecting engagement tongue (52, 52, 52), which is delimited by an arcuate folding line (53) extending between the end sections (48) and is diveded by radially extending incisions (47), such that at least two engagement flaps (52) are formed, said engagement flaps (52) being adapted to be folded upwardly to bear on the inclined surface of the can (4) and to engage below the rim (8) of the can when the carrier is assembled on the cans.

11. A carrier according to claim 10, **characterised in that** oblique folding lines (55) are disposed in the carrier blank (32), connecting each outermost engagement flap (52) with an adjacent gripping recess (42) or with an adjacent side (58) of the blank (32).

12. A carrier according to the claim 11, **characterised in that** a folding line (54) is disposed in the carrier blank (32) extending parallel with the sides (56) of the blank and with the rows of cans, said folding line (54) connecting step-like portions (20) between the intermediate section (16) and the end sections (18) in the outer slits (44) with each other or with an adjacent side (58) in order to form an outer foldable panel on each long side (56)

13. A plane blank of cardboard, preferably corrugated cardboard, said blank being adapted to be assembled as a carrier for cylindrical cans and having, for each can to be connected by the carrier, a pair of two mutually opposing, essentially arcuate slits (14; 44, 45), **characterised in that** the essentially arcuate slits (14; 44, 45) comprise an arcuate intermediate section (16; 46) and arcuate end sections (18; 48) on both sides thereof, and **in that** the intermediate section (16; 46) is formed radially inside the extended arcuate end sections (18; 48) such that an inwardly projecting engagement tongue (22; 52) is formed between the end sections (18; 48).

14. A plane blank according to claim 1, **characterised in that** the arcuate end sections (18; 48) are circular having a radius which is equal to or slightly larger than the radius of the cans.

15. A plane blank according to claim 13 or 14, **characterised in that** foldable panels (30; 60) are disposed in the blank and are foldable in folding lines (24; 54), said folding lines being parallel with the long sides of the blank and connecting the ends of the arcuate slits (14; 44, 45) with each other or with an adjacent side (28; 58) of the blank.

16. A plane blank according to claim 13, **characterised in that** said pairs of two mutually opposing, essentially arcuate slits (14) are arranged in one row and that gripping recesses (12) are centrally arranged in the sides (26) of the blank.

17. A plane blank according to claim 13, **characterised in that** said pairs of two mutually opposing, essentially arcuate slits (44, 45) are arranged in two rows and that gripping recesses (42) are centrally arranged between said rows.

Patentansprüche

1. Träger aus Karton, vorzugsweise aus Wellkarton, zum Verbinden einer Mehrzahl von im Wesentlichen zylindrischen Dosen (4), welche in einer Reihe oder mehreren Reihen angeordnet sind und einen geneigten oberen Teil und einen Deckelverschluss (6) mit einem hervorstehenden runden Rand (8) aufweisen, wobei der Träger (1; 31) aus einem ebenen Zuschnitt (2; 32) hergestellt wird, welcher für jede Dose, die mit dem Träger verbunden werden soll, zwei einander gegenüberliegende, im Wesentlichen gekrümmte Schlitze (14; 44, 45) aufweist, deren äußere Kanten unterhalb des Randes (8) der Dosen in Eingriff gelangen, wenn der Träger auf der Mehrzahl von Dosen montiert

wird, um den Träger und die Dosen zu verbinden und einen Verpackungszusammenbau auszubilden, **dadurch gekennzeichnet, dass** die im Wesentlichen gekrümmten Schlitze (14; 44, 45) einen gekrümmten Mittelabschnitt (16; 46) und gekrümmte Endabschnitte (18; 48) auf beiden Seiten davon umfassen, wobei der Mittelabschnitt (16; 46) radial innerhalb der erweiterten gekrümmten Endabschnitte (18; 48) ausgebildet ist, so dass eine nach innen hervorstehende Eingriffszunge (22; 52) zwischen den Endabschnitten (18; 48) ausgebildet wird, wobei die Zunge so ausgelegt ist, um an den Rand (8) anzustoßen und unterhalb dessen einzugreifen, um den Träger (1; 31) und die Dosen (4) zu einem Verpackungszusammenbau zu verbinden.

2. Träger nach Anspruch 1, **dadurch gekennzeichnet, dass** die gekrümmten Endabschnitte (18; 48) kreisförmig sind, wobei sie einen Radius aufweisen, welcher gleich dem Radius des kreisförmigen Randes (8) oder etwas größer als dieser ist.

3. Träger nach Anspruch 2, **dadurch gekennzeichnet, dass** der ebene Zuschnitt (2; 32) im Wesentlichen rechteckig ist und dass faltbare Rahmenelemente (30; 60) im Zuschnitt parallel zu den langen Seiten des Zuschnitts angeordnet sind.

4. Träger nach Anspruch 3, **dadurch gekennzeichnet, dass** die Rahmenelemente (30; 60)in Faltlinien (24; 54) faltbar sind, welche die Enden der gekrümmten Schlitze (14; 44, 45) miteinander oder mit einer benachbarten Seite (28; 58) des Zuschnitts verbinden.

5. Träger nach Anspruch 4, **dadurch gekennzeichnet, dass** die äußeren Kanten des Trägers in gleicher Ebene mit oder innerhalb der maximalen äußeren Abmessungen der Gruppe von Dosen (4) in dem Verpackungszusammenbau angeordnet sind.

6. Träger nach jedem der vorangehenden Ansprüche, **dadurch gekennzeichnet, dass** die Griffaussparungen (12; 42) im Trägerzuschnitt angeordnet sind, welche so ausgelegt sind, um durch Finger ergriffen zu werden, um den Verpackungszusammenbau anzuheben und zu handhaben.

7. Träger nach Anspruch 6, **dadurch gekennzeichnet, dass** der Träger so ausgelegt ist, um zwei oder mehrere Dosen (4) in einer Reihe zu verbinden, und dass die Griffaussparungen (12) zentral in den Seiten (26) des Zuschnitts angeordnet sind.

8. Träger nach Anspruch 6, **dadurch gekennzeichnet, dass** der Träger so ausgelegt ist, um zwei oder mehrere Dosen (4) in zwei. Reihen zu verbinden, und dass die Griffaussparungen (42), vorzugsweise runde oder ovale Öffnungen, darstellen, welche zentral zwischen den Reihen der Dosen (4) angeordnet sind.

9. Träger nach Anspruch 8, **dadurch gekennzeichnet, dass** der innere gekrümmte Schlitz (45) in jedem Paar gegenüberliegender Schlitze (44, 45) einen gekrümmten Mittelabschnitt (46) mit einem Radius aufweist, welcher größer ist als der Radius der gekrümmten Endabschnitte (48).

10. Träger nach Anspruch 9, **dadurch gekennzeichnet, dass** der gekrümmte Mittelabschnitt (46) des inneren Schlitzes (45) eine hervorstehende Eingriffszunge (52, 52, 52) ausbildet, welche durch eine gekrümmte Faltlinie (53) begrenzt ist, die sich zwischen den Endabschnitten (48) erstreckt, und durch sich radial erstreckende Einschnitte (47) geteilt ist, so dass wenigstens zwei Eingriffsklappen (52) ausgebildet werden, wobei die Eingriffsklappen (52) so ausgelegt sind, um nach oben gefaltet zu werden, um auf die geneigte Oberfläche der Dose (4) zu wirken und unterhalb des Randes (8) der Dose einzugreifen, wenn der Träger auf den Dosen montiert wird.

11. Träger nach Anspruch 10, **dadurch gekennzeichnet, dass** schräg verlaufende Faltlinien (55) im Trägerzuschnitt (32) angeordnet sind, welche jede äußerste Eingriffsklappe (52) mit einer benachbarten Griffaussparung (42) oder einer benachbarten Seite (58) des Zuschnitts (32) verbinden.

12. Träger nach Anspruch 11, **dadurch gekennzeichnet, dass** eine Faltlinie (54) auf dem Trägerzuschnitt (32) angeordnet ist, welche sich parallel mit den Seiten (56) des Zuschnitts und mit den Reihen von Dosen erstreckt, wobei die Faltlinie (54) stufenartige Abschnitte (20) zwischen dem Mittelabschnitt (16) und den Endabschnitten (18) in den äußeren Schlitzen (44) miteinander oder mit einer benachbarten Seite (58) des Zuschnitts verbindet, um ein äußeresfaltbare Rahmenelement auf jeder Langseite (56) auszubilden.

13. Ebener Zuschnitt aus Karton, vorzugsweise aus Wellkarton, wobei der Zuschnitt so ausgelegt ist, um als ein Träger

für zylindrische Dosen montiert zu werden, und wobei er für jede der Dosen, die mit dem Träger verbunden werden soll, zwei einander gegenüberliegende, im Wesentlichen gekrümmte Schlitze (14; 44, 45) aufweist, **dadurch gekennzeichnet, dass** die im Wesentlichen gekrümmten Schlitze (14; 44, 45) einen gekrümmten Mittelabschnitt (16; 46) und gekrümmte Endabschnitte (18; 48) auf beiden Seiten davon umfassen, und dass der Mittelabschnitt (16; 46) radial innerhalb der erweiterten gekrümmten Endabschnitte (18; 48) ausgebildet ist, so dass eine nach innen hervorstehende Eingriffszunge (22; 52) zwischen den Endabschnitten (18; 48) ausgebildet wird.

14. Ebener Zuschnitt nach Anspruch 13, **dadurch gekennzeichnet, dass** die gekrümmten Endabschnitte (18; 48) ringförmig sind, wobei sie einen Radius aufweisen, welcher gleich dem Radius der Dosen oder etwas größer als dieser ist.

15. Ebener Zuschnitt nach Anspruch 13 oder 14, **dadurch gekennzeichnet, dass** faltbare Rahmenelemente (30; 60) im Zuschnitt angeordnet sind und in Faltlinien (24; 54) faltbar sind, wobei die Faltlinien parallel mit den Langseiten des Zuschnitts sind und die Enden der gekrümmten Schlitze (14; 44, 45) miteinander oder mit einer benachbarten Seite (28; 58) des Zuschnitts verbinden.

16. Ebener Zuschnitt nach Anspruch 13, **dadurch gekennzeichnet, dass** die Paare von zwei einander gegenüberliegenden, im Wesentlichen gekrümmten Schlitzen (14) in einer Reihe angeordnet sind und dass die Griffaussparungen (12) zentral in den Seiten (26) des Zuschnitts angeordnet sind.

17. Ebener Zuschnitt nach Anspruch 13, **dadurch gekennzeichnet, dass** die Paare von zwei einander gegenüberliegenden, im Wesentlichen gekrümmten Schlitzen (44, 45) in zwei Reihen angeordnet sind und dass die Griffaussparungen (42) zentral zwischen den Reihen angeordnet sind.

Revendications

1. Support en carton, de préférence en carton ondulé, pour relier une pluralité de boîtes métalliques généralement cylindriques (4), étant disposées en une ou plusieurs rangées et comportant une partie supérieure inclinée et une fermeture supérieure (6) avec une bordure circulaire en saillie (8), ledit support (1 ; 31) étant produit à partir d'un flan plan (2 ; 32), comportant, pour chaque boîte devant être reliée par le support, deux fentes sensiblement arquées, mutuellement opposées (14 ; 44, 45), dont les bords externes s'engagent sous la bordure (8) des boîtes lorsque le support est assemblé sur la pluralité de boîtes pour relier le support et les boîtes et former un emballage, **caractérisé en ce que** les fentes sensiblement arquées (14 ; 44, 45) comprennent une section intermédiaire arquée (16 ; 46) et des sections d'extrémité arquées (18 ; 48) sur leurs deux côtés, ladite section intermédiaire (16 ; 46) étant formée radialement à l'intérieur des sections d'extrémité arquées (18 ; 48) étendues de manière qu'une languette d'engagement en saillie vers l'intérieur (22 ; 52) soit formée entre les sections d'extrémité (18 ; 48), ladite languette étant apte à buter sur, et s'engager sous, la bordure (8) pour relier le support (1 ; 31) et les boîtes (4) à un emballage.

2. Support selon la revendication 1, **caractérisé en ce que** les sections d'extrémité arquées (18 ; 48) sont circulaires, ayant un rayon qui est égal, ou légèrement supérieur, au rayon de la bordure circulaire (8).

3. Support selon la revendication 2, **caractérisé en ce que** le flan plan (2 ; 32) est essentiellement rectangulaire et **en ce que** des panneaux pliables (30 ; 60) sont disposés dans le flan, parallèles aux côtés longs du flan.

4. Support selon la revendication 3, **caractérisé en ce que** les panneaux (30 ; 60) sont pliables le long de lignes de pliage (24 ; 54), reliant les extrémités des fentes arquées (14 ; 44, 45) l'une à l'autre ou avec un côté adjacent (28 ; 58) du flan.

5. Support selon la revendication 4, **caractérisé en ce que** les bords externes du support sont disposés en alignement avec les, ou à l'intérieur des, dimensions externes maximales du groupe de boîtes (4) dans l'emballage.

6. Support selon l'une quelconque des revendications précédentes, **caractérisé en ce que** des évidements de préhension (12 ; 42), aptes à être saisis par les doigts pour soulever et manier l'emballage, sont disposés dans le flan de support.

7. Support selon la revendication 6, **caractérisé en ce que** le support est apte à relier au moins deux boîtes (4) dans

une rangée, et **en ce que** lesdits évidements de préhension (12) sont agencés centralement dans les côtés (26) du flan.

8. Support selon la revendication 6, **caractérisé en ce que** le support est apte à relier au moins deux boîtes (4) dans deux rangées, et **en ce que** lesdits évidements de préhension (42) constituent des ouvertures, de préférence circulaires ou ovales, disposées centralement entre les rangées de boîtes (4).

9. Support selon la revendication 8, **caractérisé en ce que** la fente arquée interne (45) dans chaque paire de fentes opposées (44, 45) comporte une section intermédiaire arquée (46) ayant un rayon qui est plus grand que le rayon des sections d'extrémité arquées (48).

10. Support selon la revendication 9, **caractérisé en ce que** la section intermédiaire arquée (46) de ladite fente interne (45) forme une languette d'engagement en saillie (52, 52, 52), qui est délimitée par une ligne de pliage arquée (53) s'étendant entre les sections d'extrémité (48) et est divisée par des incisions s'étendant radialement (47), de manière qu'au moins deux volets d'engagement (52) soient formés, lesdits volets d'engagement (52) étant aptes à être pliés vers le haut pour porter sur la surface inclinée de la boîte (4) et s'engager sous la bordure (8) de la boîte, lorsque le support est assemblé sur les boîtes.

11. Support selon la revendication 10, **caractérisé en ce que** des lignes de pliage obliques (55) sont disposées dans le flan de support (32), reliant chaque volet d'engagement le plus externe (52) avec un évidement de préhension (42) adjacent ou avec un côté adjacent (58) du flan (32).

12. Support selon la revendication 11, **caractérisé en ce qu'**une ligne de pliage (54) est disposée dans le plan de support (32) s'étendant parallèlement aux côtés (56) du flan et aux rangées de boîtes, ladite ligne de pliage (54) reliant des portions du type épaulements (20) entre la section intermédiaire (16) et les sections d'extrémité (18) dans les fentes externes (44) les unes avec les autres ou avec un côté adjacent (58) afin de former un panneau pliable externe sur chaque côté long (56).

13. Flan plan en carton, de préférence en carton ondulé, ledit flan étant apte à être assemblé en un support pour des boîtes métalliques cylindriques, et comportant, pour chaque boîte devant être reliée par le support, une paire de deux fentes sensiblement arquées, mutuellement opposées (14 ; 44, 45), **caractérisé en ce que** les fentes sensiblement arquées (14 ; 44, 45) comprennent une section intermédiaire arquée (16 ; 46) et des sections d'extrémité arquées (18 ; 48) sur leurs deux côtés, et **en ce que** la section intermédiaire (16 ; 46) est formée radialement à l'intérieur des sections d'extrémité arquées (18 ; 48) étendues de manière qu'une languette d'engagement en saillie vers l'intérieur (22 ; 52) soit formée entre les sections d'extrémité (18 ; 48).

14. Flan plan selon la revendication 1, **caractérisé en ce que** les sections d'extrémité arquées (18 ; 48) sont circulaires, ayant un rayon qui est égal, ou légèrement supérieur, au rayon des boîtes.

15. Flan plan selon la revendication 13 ou 14, **caractérisé en ce que** des panneaux pliables (30 ; 60) sont disposés dans le flan et sont pliables le long de lignes de pliage (24 ; 54), lesdites lignes de pliage étant parallèles aux côtés longs du flan et reliant les extrémités des fentes arquées (14 ; 44, 45) l'une à l'autre ou avec un côté adjacent (28 ; 58) du flan.

16. Flan plan selon la revendication 13, **caractérisé en ce que** lesdites paires de fentes sensiblement arquées, mutuellement opposées (14) sont agencées dans une rangée et **en ce que** des évidements de préhension (12) sont agencés centralement dans les côtés (26) du flan.

17. Flan plan selon la revendication 13, **caractérisé en ce que** lesdites paires de fentes sensiblement arquées, mutuellement opposées (44, 45) sont agencées dans deux rangées et **en ce que** des évidements de préhension (42) sont agencés centralement entre lesdites rangées.

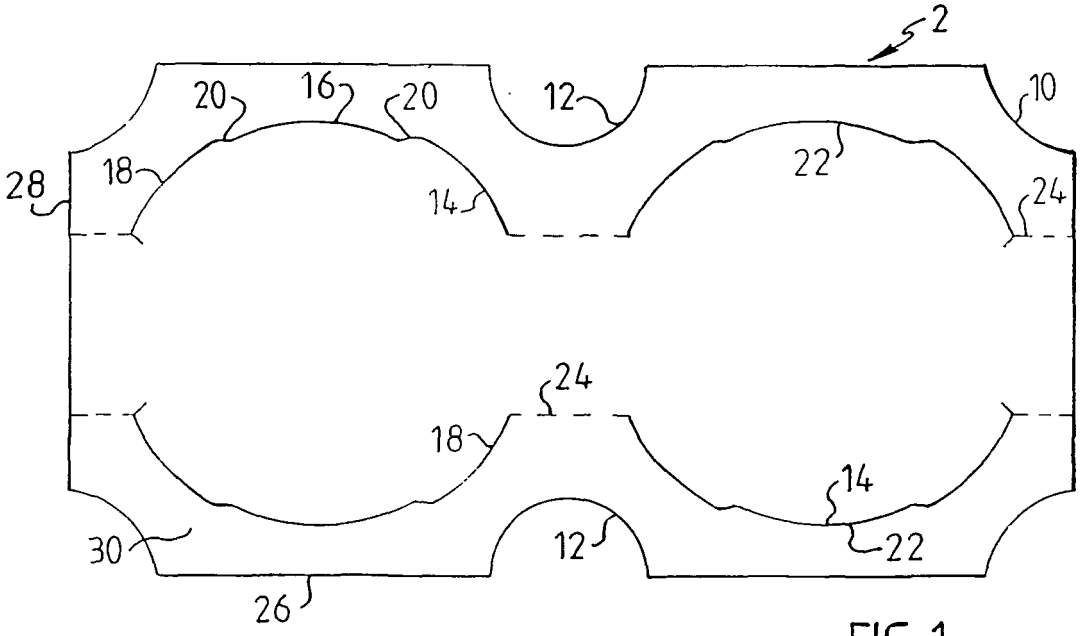

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FIG. 1

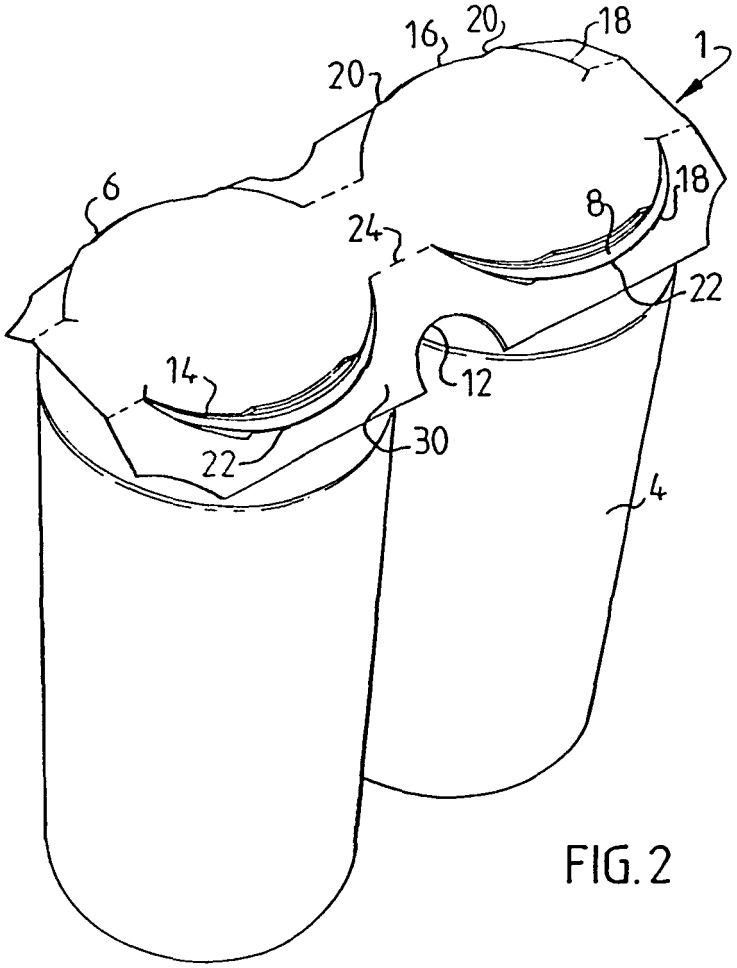

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FIG. 2

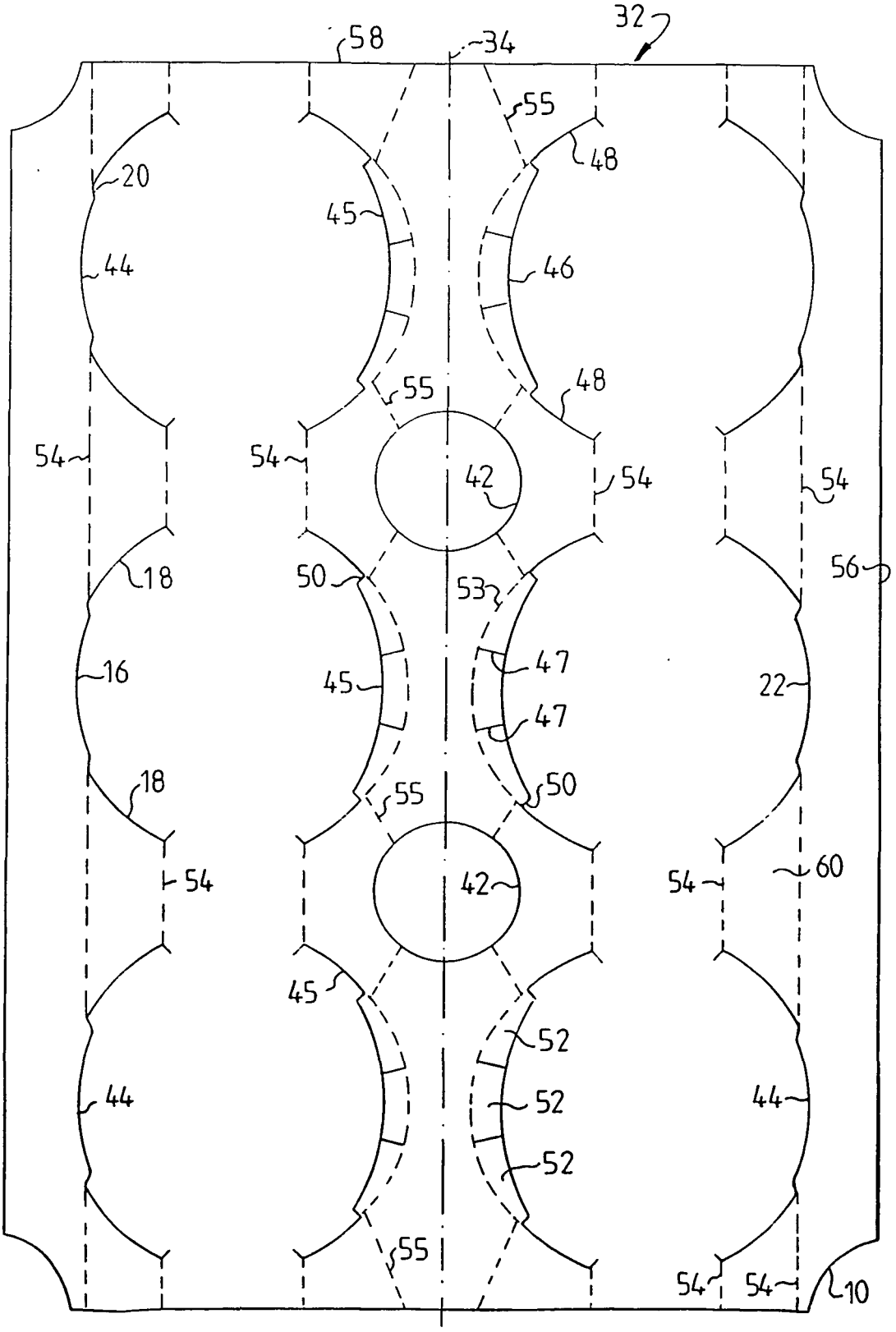

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FIG. 3

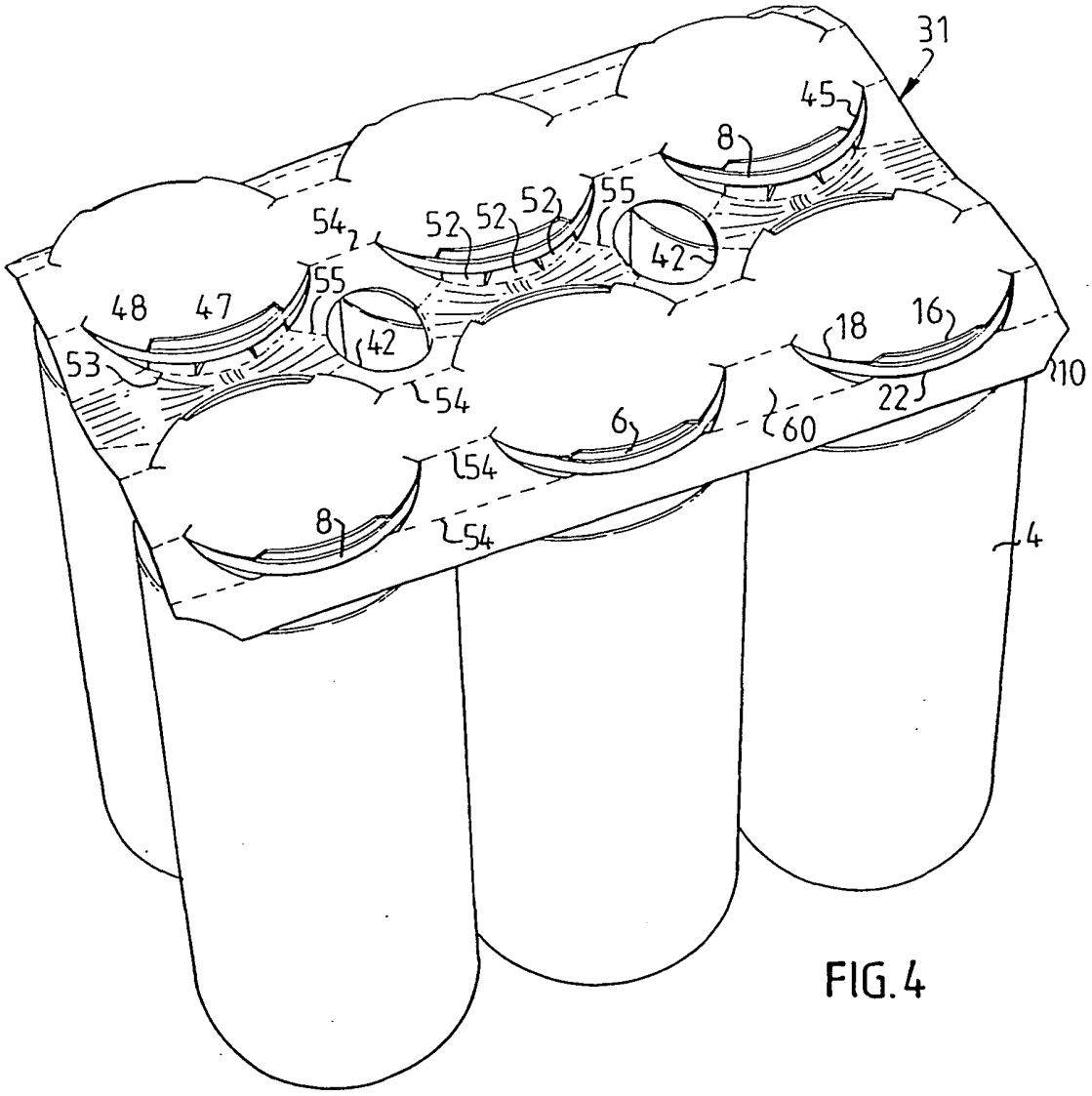


FIG. 4