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(54) Carrier package for a multiplicity of bottles.

(57) A carrier and a process for packaging containers, which carrier is provided with a supporting member provided with two rows of interconnected supporting rings (1) for letting through and holding containers, as well as with a handle member (3) connected with the supporting member, the supporting rings being connected by elongated, flexible, strip-shaped members (2) with two rows of interconnected bearing rings (4), in such a manner that, on the one hand, the strip-shaped members can be given such a configuration that the bearing rings are located outside the container passage plane of the supporting member and, on the other hand, after moving the carrier from above over the containers, the bearing rings can be swivelled to below the containers into a position in which each bearing ring is in line with a supporting ring and forms a support for a container.

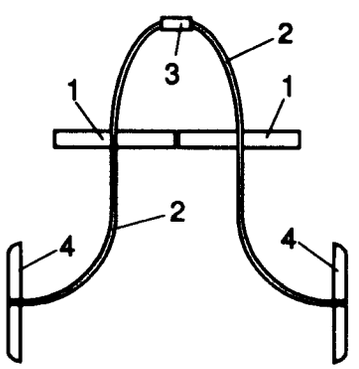

FIG. 1

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This invention relates to a carrier for packaging containers in two rows of each at least two pieces, which carrier is provided with a handle member and a supporting member connected therewith, provided with supporting rings, each for letting through and holding a container, arranged in two rows of each at least two pieces and interconnected to form one whole, from each of which supporting rings two elongated, strip-shaped members of equal length extend, which substantially lie in the median perpendicular plane of the row of associated supporting rings and are attached to a bearing ring at some distance from the supporting rings, and which bearing rings juxtaposed in a row are interconnected to form one whole.

Such a carrier is known from FR-A-1 124 724. As described therein, the two rows of bearing rings are connected with each other in the same manner as the two rows of supporting rings to form one whole. Each bearing ring is provided with an annular element which can let through and hold a container and with at least one strip-shaped member which extends at a short distance below the annular element, and on which the bottom of a container can rest. In order to enable the containers to be placed in such a carrier, each container supplied must be lifted up and moved from above through a supporting ring and an annular element of a bearing ring until the bottom of the container contacts the strip-shaped member.

Moving the containers from above into the supporting and bearing rings not only means that during the filling of a carrier each container must be lifted up and handled, but also that a label affixed to the container may soon be damaged during the movement along the supporting and bearing rings. In addition, the containers are often packaged in the carriers when the label on the container is still wet, which considerably increases the risk of damage to the label when placing the container in the carrier.

The object of the invention is to design a carrier of the type described in the opening paragraph such that it can be filled with containers in a relatively simple manner without incurring the risk of damage to the label caused by contact between the container and the carrier.

According to the invention this object is attained in a carrier of the type described in the opening paragraph by making the strip-shaped members so flexible that, on the one hand, they can be given such a configuration that each bearing ring is substantially located outside a straight cylinder defined by the inner peripheral area of the supporting ring with which that bearing ring is connected by the strip-shaped members and, on the other hand, such a configuration that the axis of the bearing ring substantially coincides with the axis of the supporting ring with which that bearing ring is connected by the strip-shaped members.

These steps result in a carrier, in which, by tilting the rows of bearing rings outwards, which is possible through the flexible strip-shaped members, the containers can be placed without necessitating contact of a label affixed to them with parts of that carrier. This is simply realized when according to a further embodiment of the invention the containers are supplied on a supporting surface in two juxtaposed rows, the carrier, of which the rows of bearing rings are tilted outwards, is moved with its supporting rings over the containers so far that the bearing rings connected therewith, which during this movement of the carrier are in juxtaposition to the left and right of the containers, are brought to below the supporting surface in line with the rows of supporting rings located above, after which the supporting surface is drawn from between the containers and the bearing rings, so that the containers sink down with respect to the carrier and come to rest on and in the bearing rings. Thus, after the carrier has been partly placed on the containers, it is folded around them to envelop those containers.

When such a carrier is picked up by hand by lifting it up at the handle member, the two rows of containers will in general support each other through their weight. Shocks or undulating movements, however, may have the result that the rows of containers move away from and towards each other. In order to avoid this, it is preferable according to a further embodiment of the invention that means be present with which the two rows of bearing rings can be interconnected in a mutually adjacent position.

The two rows of bearing rings can be held together in various manners in the ready-for-use position of the carrier, e.g. via detachable press or snap connections. According to a further embodiment of the invention, however, it is preferable that the means for connecting two rows of bearing rings have a semipermanent character, such as a glued or welded joint or a mechanical joint via deformable cramps or rings.

When the handle member is formed by a rod-shaped member extending substantially parallel to the supporting member, and which is connected with the supporting member by further strip-shaped members extending in line with the former strip-shaped members, there is readily provided a favourable transfer of force from the bearing rings to the rod-shaped member to be gripped by hand.

The further strip-shaped members may be mounted, constructed and designed in various ways. Thus it is possible that no further strip-shaped members extend from the outer supporting rings of the two rows, so that the handle member

concentrates in the central part of the carrier. If in that case the bearing capacity of the further strip-shaped members is considered too small, it may be provided that from each end of the rod-shaped member a curved strip-shaped member extends which terminates at the meeting point of two adjacent, outer supporting rings.

The carrier may then have a height substantially equal to that of the containers if the further strip-shaped members, seen transversely to a row, lie at an acute angle to the plane of symmetry extending perpendicularly to that row, preferably an angle between 5° and 20°. The rod-shaped member may be located at the height of the upper sides of the containers. When the rod-shaped member is gripped by hand, the further strip-shaped members will spring towards each other, so that sufficient space is formed above the containers to enable transport of the carrier without contact of the hand with the containers.

A reliable support of a container on a bearing ring can be obtained if the bearing rings are formed by disk rings arranged at the ends of the strip-shaped members facing away from the supporting rings, each disk ring preferably having a j-shaped cross-section, which j-shape is form-connected with the lower side of the container.

With reference to practical examples shown in the accompanying drawings the carrier according to the invention and the method of placing this carrier around a group of containers will now be discussed and explained in more detail.

In these drawings:

Fig. 1 is a side elevational view of a carrier according to the invention;

Fig. 2 is a front elevational view of the carrier shown in Fig. 1;

Fig. 3 is a top plan view of the carrier shown in Fig. 1;

Fig. 4 illustrates a plurality of carriers shown in Fig. 1, stacked in a transport and storage position;

Figs. 5 - 7 illustrate the method of placing the carrier of Fig. 1 around a group of containers;

Fig. 8 is a perspective view of a group of containers placed in a carrier shown in Fig. 1;

Fig. 9 is a perspective view of a group of containers placed in a carrier according to a second embodiment of the invention;

Fig. 10 is a perspective view of a group of containers placed in a carrier according to a third embodiment of the invention;

Fig. 11 is a front elevational view of a storage or display position of a group of containers placed in a carrier according to a fourth embodiment of the invention; and

Fig. 12 is a front elevational view of a carrying position of a group of containers placed in a carrier shown in Fig. 11.

The carrier shown in Figs. 1-3 comprises a supporting member consisting of six supporting rings 1 arranged in two rows of each three supporting rings 1, the supporting rings of a row being interconnected by a strip-shaped member 2, which at the place of attachment to a supporting ring 1 extends perpendicularly to the plane of passage of that supporting ring 1. Moreover, each strip-shaped member 2 extends in the area adjacent to the supporting ring 1 in a plane constituting the median perpendicular plane of a row of three interconnected supporting rings 1. A similar strip-shaped member 2 is located at each end of a row of supporting rings, so that each row of three supporting rings is connected with four strip-shaped members 2.

Each strip-shaped member 2 terminates at one end at a handle member 3 and at its other end at a bearing ring in the form of a disk ring 4, of which, in total, six are present in two rows of three each, the strip-shaped members 2 being connected with the disk rings 4 in a similar configuration as is the case with the supporting rings 1, although the strip-shaped members 2 terminate at the disk rings 4. Further, as may be apparent from Fig. 1, each strip-shaped member 2, in side view, has an approximately S-shaped configuration, such that in case no external forces are exerted, the disk rings 4, in top view, are located on both sides of the two rows of supporting rings 1, as may be most clearly apparent from Fig. 3.

The handle member 3 extends parallel to the rows of supporting rings 1 and forms one whole with the six ends of the strip-shaped members 2, so that the two rows of supporting rings 1, and consequently also the two rows of disk rings 4, are interconnected via the strip-shaped members 2 and the handle member 3.

The carrier may be manufactured as one whole from one and the same plastic material, in which the sizes of the different parts of the carrier must be so chosen and the plastic material must have such material properties that the handle member 3, the supporting rings 1 and the disk rings 4 are sufficiently rigid to reliably hold a number of containers corresponding to the number of supporting rings 1, while further the strip-shaped members 2 are highly flexible.

This high flexibility promotes as compact as possible storage and transport of the carriers, because they can be brought into a more stretched form and thus stacked, as may be apparent from Fig. 4, in which five carriers are shown in expanded form and stacked relation. It will further be apparent from Fig. 4 that the carriers can be compressed into an even flatter stretched form.

With reference to Figs. 5-7 the placing of a group of six containers 5 in the above carrier will now be elucidated.

The containers 5 juxtaposed in two rows are supplied on a supporting element 6. Subsequently, a carrier is supplied from above, as shown in Fig. 5, in such a manner that the supporting rings 1 move over the containers 5, while the disk rings 4 are laterally displaced along the containers 5. The displacement is continued until the supporting rings 1 have moved over the containers 5 so far that the disk rings 4 can be swivelled to below the supporting element 6, as shown in Fig. 6. In this position each supporting ring 1 must be located above a label 7 affixed to a container 5, so that a supporting ring 1 moved over the container 5 cannot damage this label 7. It will also be clear that a label 7 will no more be damaged by a disk ring 4 moved at some distance along the container 5, which disk ring 4 is then swivelled to below the supporting element 6 and, consequently, to below the container 5.

After swivelling the two rows of disk rings 4 to the position shown in Fig. 6 the disk rings 4 are interconnected by means of one or a plurality of coupling elements 8. The coupling element 8 shown is made of plastic material and is fixed to the disk rings 4 through glueing or welding at a place where two disk rings 4 from adjacent rows are closest to each other. It will be clear that the two rows of disk rings 4 may also be interconnected in various other manners. For instance, there may be provided elements to be coupled via a snap connection or deformable metal elements. Moreover, the disk rings may be provided at suitable places with projections which after swivelling the two rows of disk rings towards each other come into mutual contact and can thus be connected together. In case the disk rings 4 are so designed that after swivelling them towards each other they come into mutual local contact, the disk rings 4 can be simply interconnected by welding or glueing them together.

After interconnecting the two rows of disk rings 4 the supporting element 6 is drawn from below the containers 5 by an active movement of that element or by moving the containers 5 further. As soon as the supporting element 6 releases the bottom of a container 5, this container will sink down, as shown in Fig. 7, to rest on the disk ring 4, which is preferably of such configuration with an upwardly extending edge that the container 5 is centered with respect to the disk ring and is then supported while being secured against lateral displacement. After complete removal of the supporting element 6 each container 5 is supported by a disk ring 4 and kept in this supporting position by cooperation of the disk ring 4 with a supporting ring 1 positioned in line above the disk ring 4.

When the container 5 comes to rest on the disk ring 4, the label 7 moves away from the supporting ring 1. Thus a carrier can be placed on and around a container 5 without coming into contact with the label 7, which is of special importance if the containers 5 come from a bottling plant and have been provided with a label 7 immediately before placing them in the carrier, because then the label is still wet, so that it can soon be damaged.

It should be noted in this respect that it is also possible to omit interconnection of the two rows of disk rings 4. In general, the weight of the containers 5 will then ensure that the position shown in Fig. 7 is retained, also when the carrier with containers is lifted up at the handle member 3, although in case of shocks or undulating displacement of the carriers there is a risk that the two rows of containers will move apart and then strike against each other. If this is held allowable, e.g. because of a suitable design of the supporting rings 1 and the disk rings 4, then it is preferable to start from an initially different design than that of the carrier shown in Fig. 1. This modified carrier, in case no external forces are exerted on it, is shaped as shown in Fig. 7, in other words the strip-shaped members 2 are straight between the supporting rings 1 and the disk rings 4. It will be clear that in order to place such a carrier around the containers 5 the two rows of disk rings 4 must be moved to the position shown in Fig. 5 by actively guiding them before the moving on of the supporting rings 1 commences. Besides, such a carrier may also be used when applying coupling elements 8. The strip-shaped members 2 will then have less tendency towards rebounding and will retain the position shown in Fig. 7 in a tighter condition, which may look better from an aesthetic viewpoint.

The carrier with containers 5 placed therein, obtained by the above method, is perspectively shown in Fig. 8. The handle member 3 shown therein extends over the full length of a row of three containers 5. Such a length of the handle member 3 is not necessary for picking up and carrying the carrier. If, e.g. from a viewpoint of material economy, a shorter handle member is preferred, then this wish may be complied with by the design as shown in Fig. 9, in which the length of the handle member 13 is equal to the diameter of a supporting ring 1. The outer strip-shaped members 12a then terminate at the height of the supporting ring 1, while between two containers 5 a similar strip-shaped member 12a is continued by a strip-shaped member 12b extending substantially straight between the supporting rings 1 and the handle member 13.

In case such a construction is not deemed sufficiently strong, the embodiment as shown in Fig. 10 may be chosen, in which the handle member 13 is connected with the supporting rings 1 by six strip-shaped members 12c which all start from an end of the handle member 13 and extend in the form of an arch to a meeting point of two supporting rings 1.

In case the space between the upper ends of the containers 5 is deemed too narrow to grip the handle member by hand, so that in case of transport of the carrier the upper ends of the containers 5 could rub against the fingers of the hand holding the carrier, the embodiment shown in Figs. 11 and 12 may be chosen, in which a handle member 23 is provided the length of which exceeds the diameter of a supporting ring 1. The ends of the handle member 23 are connected via four strip-shaped members 22b with the four meeting points of the supporting rings 1 of both rows, so that, seen in side view, the handle member 23, the middle supporting ring 1 and the two strip-shaped members 22b extending between them are trapezium-shaped, as clearly shown in Fig. 11. The outer supporting rings 1 and disk rings 4 are connected at their outer sides by strip-shaped members 22a extending between them.

When such a carrier filled with containers is picked up by hand, the handle member 23 will bend outwards through the weight of the containers while the strip-shaped members 22b simultaneously hinge to a straight, vertical position, as shown in Fig. 12.

There is thus obtained a carrier which in the display or storage position hardly, if at all, rises above the containers, while in the event of picking up the carrier by hand the space created by bending outwards of the handle member 23 and hinging of the strip-shaped members 22b is sufficient to enable manual transport of the carrier at the handle member 23 without the upper ends of the containers 5 needing to contact the fingers of the hand.

It is self-evident that within the scope of the invention as laid down in the attached claims many modifications and variants are possible. Thus, for instance, the supporting rings could be designed as in FR-A-1 124 724 or provided with optionally open-worked tubular members which extend to near the lower sides of the labels on the containers. Further, both the handle member and the strip-shaped members extending therefrom to the supporting rings may be designed in various other manners, both for aesthetic reasons and from a viewpoint of strength. In the practical examples shown, one strip-shaped member extends from the place between two adjacent supporting rings to a corresponding place between two bearing rings. If required, there may also be two strip-shaped members, while a supporting ring and a bearing ring may also be interconnected by strip-shaped members at places other than the places shown. It is also possible to couple the two rows of bearing rings at a place other than the meeting point of two bearing rings, e.g. by interposing a strip-shaped coupling element between the outer strip-shaped members or by placing around the bearing rings a band connected therewith. In the above practical examples, swivelling of the bearing rings from the side to below the containers was made possible by the flexibility of the strip-shaped members. Of course, it is also possible to use less curved or straight strip-shaped members hinged with respect to the supporting rings and/or the bearing rings.

Claims

1. A carrier for packaging containers in two rows of each at least two pieces, which carrier is provided with a handle member and a supporting member connected therewith, provided with supporting rings, each for letting through and holding a container, arranged in two rows of each at least two pieces and interconnected to form one whole, from each of which supporting rings two elongated, strip-shaped members of equal length extend, which substantially lie in the median perpendicular plane of the row of associated supporting rings and are attached to a bearing ring at some distance from the supporting rings, and which bearing rings juxtaposed in a row are interconnected to form one whole, characterized in that the strip-shaped members are so flexible that, on the one hand, they can be given such a configuration that each bearing ring is substantially located outside a straight cylinder defined by the inner peripheral area of the supporting ring with which said bearing ring is connected by the strip-shaped members and, on the other hand, such a configuration that the axis of the bearing ring substantially coincides with the axis of the supporting ring with which said bearing ring is connected by the strip-shaped members.

2. A carrier according to claim 1, characterized in that means are present with which the two rows of bearing rings can be interconnected in a mutually adjacent position.

3. A carrier according to claim 2, characterized in that the means for connecting two rows of bearing rings have a semipermanent character, such as a glued or welded joint or a mechanical joint via deformable cramps or rings.

4. A carrier according to any of the preceding claims, characterized in that the handle member is formed by a rod-shaped member extending substantially parallel to the supporting member, and which is connected with the supporting member by further strip-shaped members extending in line with the former strip-shaped members.

5. A carrier according to claim 4, characterized in that no further strip-shaped members extend from the outer supporting rings of the two rows.

6. A carrier according to claim 5, characterized in that from each end of the rod-shaped member a curved strip-shaped member extends which terminates at the meeting point of two outer supporting rings.

7. A carrier according to claim 6, characterized in that the further strip-shaped members, seen transversely to a row, lie at an acute angle to the plane of symmetry extending perpendicularly to said row, preferably an angle between 5° and 20°.

8. A carrier according to any of the preceding claims, characterized in that the bearing rings are formed by disk rings arranged at the ends of the strip-shaped members facing away from the supporting rings.

9. A carrier according to claim 8, characterized in that each disk ring preferably has a j-shaped cross-section.

10. A process for packaging a plurality of containers in a carrier according to any of the preceding claims, arranged in two rows of each at least two pieces, characterized by supplying the containers on a supporting surface in two juxtaposed rows, moving the carrier, of which the rows of bearing rings are tilted outwards, with its supporting rings over the containers so far that the bearing rings connected therewith, which during this movement of the carrier are in juxtaposition to the left and right of the containers, are brought to below the supporting surface in line with the rows of supporting rings located above, after which the supporting surface is drawn from between the containers and the bearing rings, so that the containers sink down with respect to the carrier and come to rest on and in the bearing rings.

11. A carrier with containers placed therein, obtained by using the process according to claim 10.

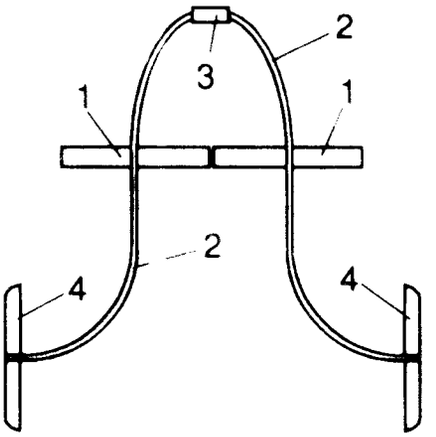

FIG. 1

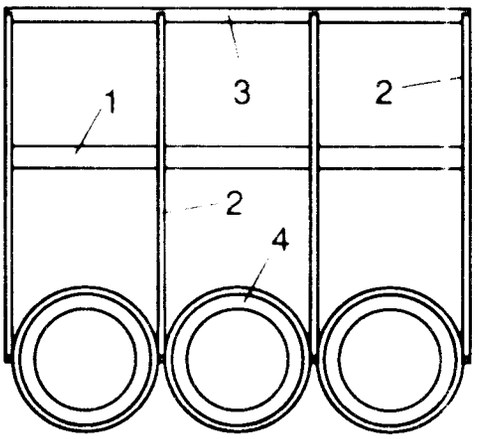

FIG. 2

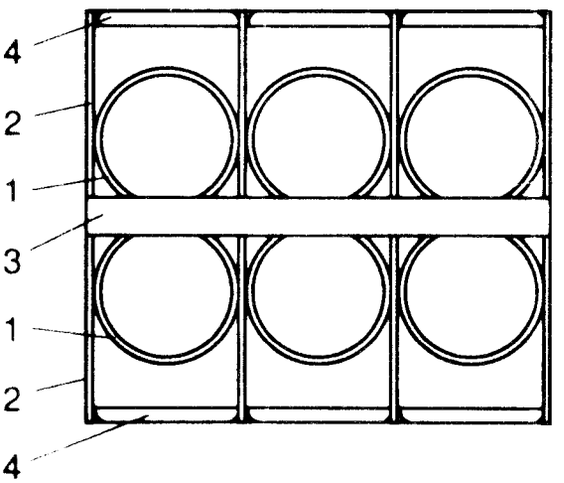

FIG. 3

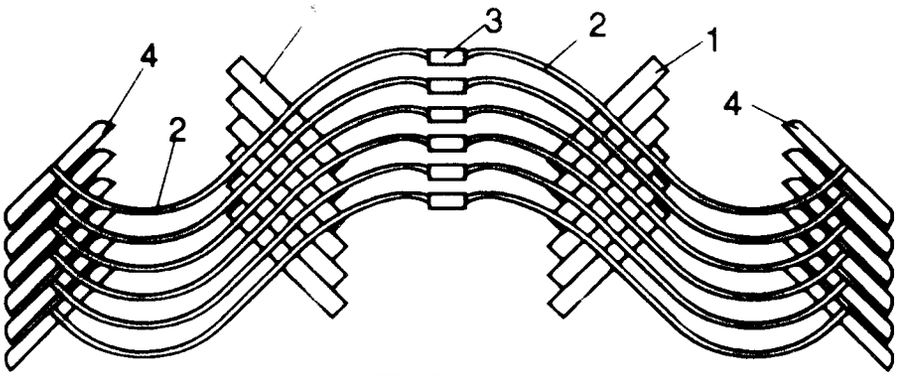

FIG. 4

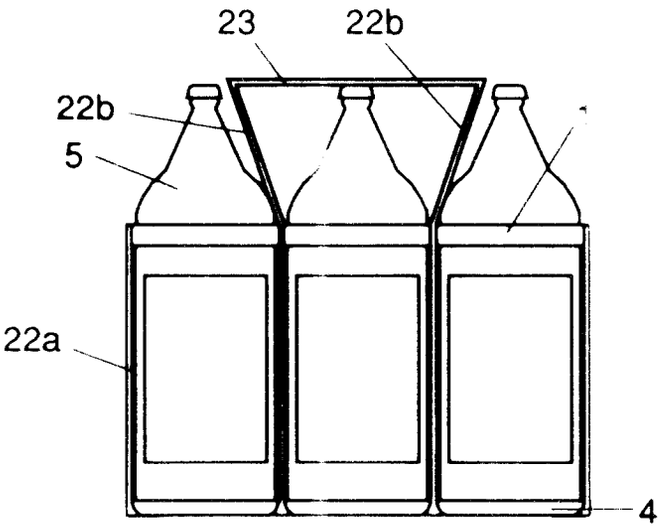

FIG. 11

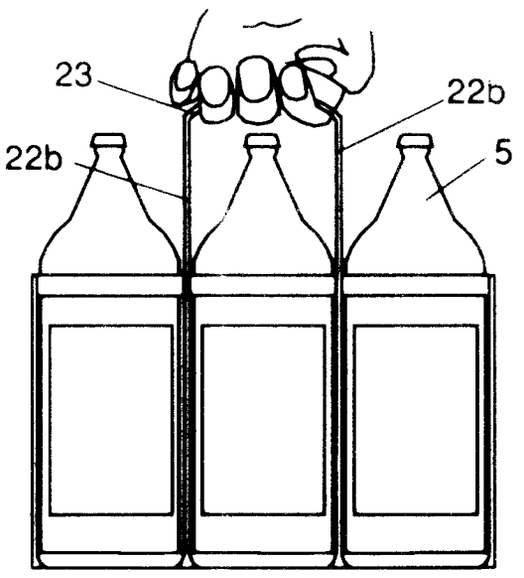

FIG. 12

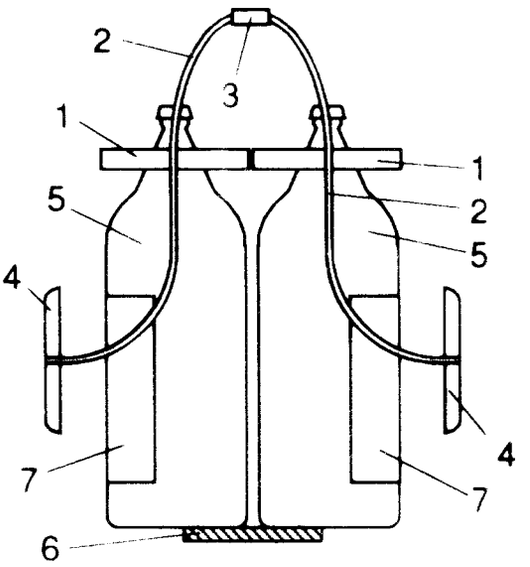

FIG. 5

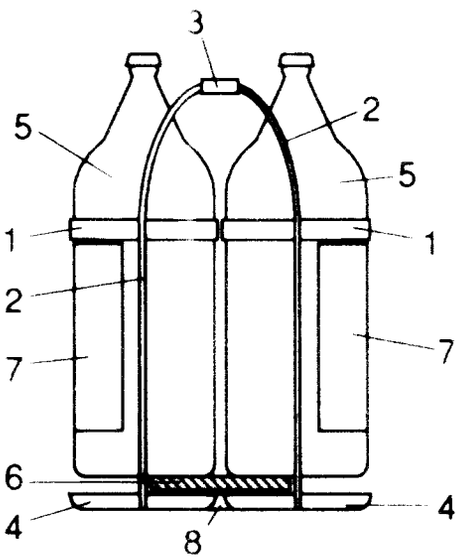

FIG. 6

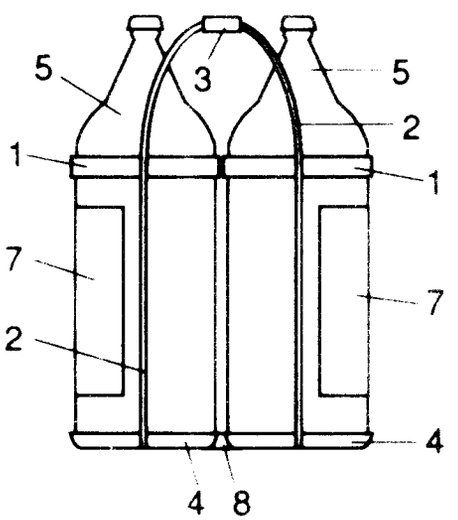

FIG. 7

FIG. 8

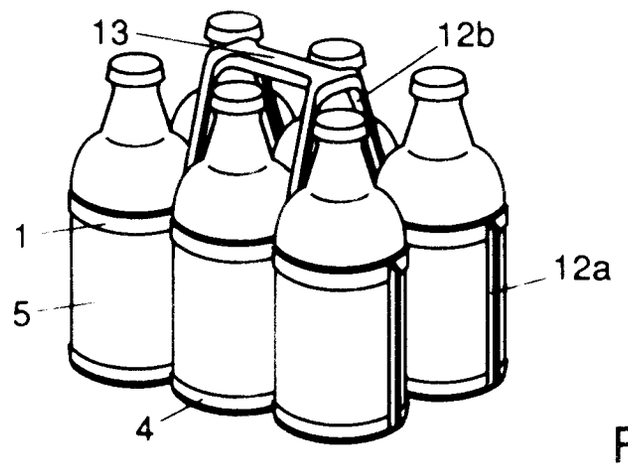

FIG. 9

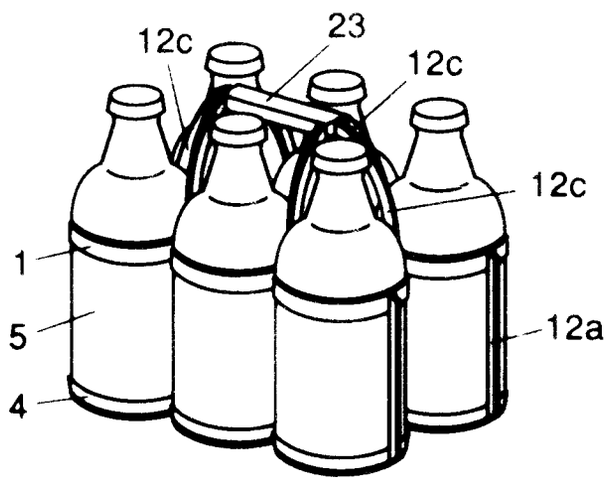

FIG. 10

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 20 1154

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
D,A	FR-A-1 124 724 (HARTLEY) * page 1, right column, line 7 - page 2, right column, line 4; figures *	1	B65D71/50 B65D71/00
A	US-A-2 404 699 (EDGERTON) * figures *	1	
A	US-A-3 186 544 (CURRY) * column 3, line 17 - column 4, line 42; figures 1-5 *	1	
A	US-A-3 369 696 (ERICKSON) * the whole document *	10,11	
A	BE-A-846 099 (LEGENDRE) * figures *	10,11	

TECHNICAL FIELDS SEARCHED (Int.Cl.5)

B65D
B65B

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21 July 1994	Newell, P

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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