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(54) Plastic holder for holding bottles at the neck side.

(57) A plastic holder (1), which serves to hold bottles at the neck side, comprises one or more flanges (4) directed downward from a top limit (3) and forming at least one compartment for taking at least one bottle neck. Opposite each other on the inside of each compartment near the free edges of the bottles are holding elements (5) which can grip directly below a thickened neck part on the top side of a bottle neck, in order to hold it in position. Each compartment can be provided with an opening (9) bounded by flange edges, through which a bottle (2) can be inserted laterally. Connecting parts can be provided between different compartments. Supporting faces (4, 8) and positioning edges (12) can be provided on the holder for interlinked stacking of several holders. For purposes of stacking holders containing bottles, thickened parts (12, 13, 14) can be provided on the top side of the holder.

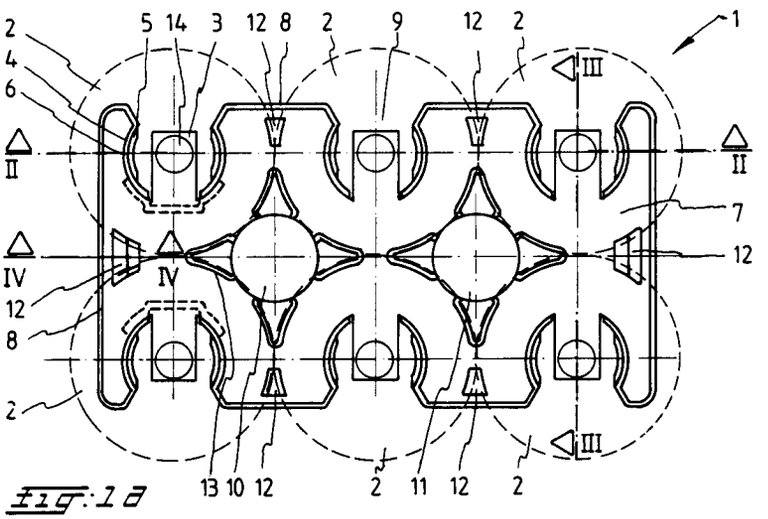

Fig. 1a

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The invention relates to a plastic holder for holding bottles at the neck side.

Drinks such as beer and mineral water are often packed in relatively small bottles, following which a certain number of such bottles in each case are grouped together in a crate and the crates filled with bottles are transported from a bottling plant to a retail-store. The bottles are also returned to the bottling plant in these crates.

Since the number of bottles in a crate (generally 24 bottles) is too large for many users, while they still wish to buy a number of such bottles at the same time, cardboard packs containing four or six bottles are often used, for example the known "six-packs". Several of such packs fit into each crate, so that the bottles can be transported using these crates.

The use of such cardboard disposable packs has the disadvantage that a quantity of waste is produced, which is environmentally polluting. While a number of users return the empty bottles with cardboard pack to a crate at the shop, this leads to disruption of the regular handling of returned packaging and thus results in, inter alia, bottle breakage and additional costs.

The object of the present invention then is to eliminate the abovementioned disadvantages.

This object is achieved through the use of a plastic holder for holding bottles at the neck side, comprising one or more flanges directed downward from a top limit and forming at least one compartment for taking at least one bottle neck, while opposite each other on the inside of each compartment near the free edges of the bottles are holding elements which can grip directly below a thickened neck part on the top side of a bottle neck, in order to hold it in position.

Such a plastic holder for bottles can be used several times, for transporting both full and empty bottles. This re-usability ensures less environmental pollution. A holder in which several bottles fit can be used advantageously for transporting banded together a small number (for example, four or six) of bottles with a relatively low capacity of, for example, 0.3 l. The bottles thus combined can be placed in a conventional crate with compartments designed for transporting empty bottles, without any appreciable additional space being required. The holders are suitable for use in automatic bottle lines, in which a holder is placed mechanically on a number of bottles, and a number of holders with bottles are placed mechanically in a crate. Moreover, the holder can be manufactured as a whole in an injection moulding process.

In an advantageous embodiment, a possibility for lateral insertion of bottles into the holder is provided, through the fact that at least one compartment is provided with an opening which is bounded by side edges of at least one flange and is large enough to allow the passage of a bottle neck. If one flange extends without other interruptions all the way round the compartment in question, the opening is bounded only by side edges of said flange.

It is, however, also possible for several flanges to be present around the compartment, each extending along a part of the periphery thereof. In that case the opening is bounded by the edges of two different flanges.

Other preferred embodiments of a holder according to the invention are described in the subclaims.

In the examples of embodiments which follow the invention will be explained in further detail with reference to the drawing, in which:

Figs. 1a, 1b, 1c and 1d show a top view, a side view, a bottom view and a second side view respectively of a first embodiment of a holder according to the invention;

Fig. 2 shows a cross-section along the line II-II of the holder from Fig. 1;

Fig. 3 shows a cross-section along the line III-III of the holder from Fig. 1;

Fig. 4 shows a cross-section along the line IV-IV of the holder from Fig. 1;

Fig. 5 shows a perspective view of a second embodiment of a holder according to the invention, viewed from the top side;

Fig. 6 is a perspective view of the holder from Fig. 5, viewed from the bottom side, and partially in cross-section;

Fig. 7 shows the clamping of a bottle in the holder of Fig. 5;

Figs. 8a, 8b and 8c are a schematic illustration of the way in which a holder of Fig. 5 can be placed on six bottles.

Figs. 1 to 4 show a first embodiment of a plastic holder according to the invention. The plastic holder, indicated in its entirety by reference number 1, is designed for holding together six bottles 2 in compartments arranged in two rows, with insertion openings 9 along the outer periphery, which compartments are made up of lips 3 serving as top limits for the bottle necks, and circular flanges 4 with insertion openings 9, on which flanges 4 holding elements 5 with recesses 6 are fitted.

Due to the fact that the flanges 4 are flexible, these holding elements 5 can spring apart, in order to grip, and hold in position, a neck of a bottle, with or without a cap or crown cork, directly below a thickened neck part at the top side of the bottle neck. The flanges 4 are tapered on either side of the insertion opening 9, in order to form insertion guides for the bottle necks.

The six compartments are combined to form

one holder 1 by means of connecting parts formed by connecting flanges 8 between each of the tapering flange parts lying at the insertion openings 9 and top panel 7. The connecting flanges 8 are provided not only to give the holder 1 sufficient rigidity, but also to prevent bottle necks from accidentally landing between the compartments, instead of in them. This simplifies placing of the bottles by hand. The connecting flanges 8 also have flat outsides, making it possible to place messages, such as advertising texts, on them.

A grip is formed in the top panel 7 from two holes 10, 11, of which the edges 20 are thickened and rounded on the underside to increase carrying comfort. The top panel 7 is also provided with positioning lobes which engage in each other when several holders 1 are stacked on top of each other, through the fact that they project at the top side of the holder and at the same time form recesses in the bottom side of the top panel 7. During stacking of several holders containing bottles, these positioning lobes 12 also interact with positioning lobes 13 of a second type by falling round the bottoms of the bottles resting on the holders and positioning them. For this purpose, thickened parts 14 are also provided on the lips 3 and fall into the kicks of bottles lying above them. The distance between the individual compartments is selected in such a way that the holders with bottles can be stacked interlinked, by placing them crosswise on top of each other.

A reinforcement rib 15 is provided on the bottom side of the top panel 7, along the longitudinal axis of the holder.

Figs. 2 to 5 show different parts again in detail cross-sections.

Fig. 3 shows in particular the reinforcement rib 15. Fig. 4 shows the shape of positioning lobes 12, in which a positioning edge 16 and a supporting face 17 can be distinguished. A holder stacked on the holder 1 is shown by dotted lines.

In Figs. 5 and 6 the plastic holder is indicated in its entirety by 31, and comprises a flat top panel 32 and downward directed flanges 33, 34, 35, 36, which form two U-shaped channels 37, 38 and a connecting part 43 lying between them. The U-shaped channels each form three compartments, not shown individually, and two connecting parts with passage channels between them, the compartments being open on two sides in order to make it possible to insert the bottle necks into the channel from the side or from the bottom and to guide the bottle necks through from one compartment to another.

Two holes 39, 40, also serving as a grip, are provided in the top panel 32, on the longitudinal central axis, symmetrically relative to the centre.

Provided on the inside of each U-shaped channel 37, 38, near the free edges of the flanges 33, 34, 35, 36 are opposite-lying bulges 41 with recesses 42, by means of which a neck 55 of a bottle 54 can be clamped and held in position, as shown in Fig. 7.

Three transversely placed reinforcement ribs 44, 45, 46 are provided in the connecting part 43. The outer reinforcement ribs 44, 46 are made in such a way that they form positioning edges 47 along the insides and positioning edges 48 on the corner points, for the purpose of stacking holders on top of each other. The free edges of the flanges 33, 34, 35, 36 are provided with supporting faces 49, 50 for this purpose.

Thickened and rounded edges 51, 52 are provided around the holes 39, 40 in the connecting part 43.

Slits 53 are present in the top panel 32, at the level of the bulges 41, through which slits mould parts project, during the injection moulding of the plastic holder, in order to form the bulges 41.

Figs. 8a, 8b and 8c indicate schematically a method for placing a holder 31 mechanically on six bottles 54, the arrows 60, 61 showing the directions of movement of the holder 31 and the bottles 54.

The method shown in Figs. 8a, 8b and 8c consists of two steps. In the first step (Fig. 7a) the holder 31 is placed from above on the bottles 54 (arrow 60), four necks 55 projecting through the spaces designed for them between the bulges 41 in the U-shaped channels 37, 38, while two necks 55' remain essentially uncovered. In the second step (Fig. 7b) the holder 31 is pushed in the lengthwise direction (arrow 61) relative to the bottles 54, until the bottle necks 55, 55' are clamped below the thickened parts 56 by the bulges 41 (Fig. 7c). After this, the holder 31 can be lifted and handled, and the bottles 54 remain hanging in it.

Claims

1. Plastic holder (1; 31) for holding bottles (2; 54) at the neck side, comprising one or more flanges (4; 33, 34, 35, 36) directed downward from a top limit (3) and forming at least one compartment for taking at least one bottle neck (55), while opposite each other on the inside of each compartment near the free edges of the bottles there are holding elements (5; 41) which can grip directly below a thickened neck part (56) on the top side of a bottle neck, in order to hold it in position.

2. Plastic holder according to claim 1, **characterised in that** in at least one compartment an opening (9) bounded by side edges of at least one flange is provided, which opening is large enough to allow through a bottle neck, for

lateral placing of a bottle in the compartment.

3. Plastic holder according to claim 2, **characterised in that** the flange parts lying on either side of the opening (9) form insertion guides for the bottle neck which taper, viewed from the top side of the compartment.

4. Plastic holder according to one of claims 1 - 3, **characterised in that** at least one connecting part is provided between at least every two compartments.

5. Plastic holder according to claim 4, **characterised in that** openings are present in the flange or flanges of two compartments connected by a connecting part, which openings interact with a channel (37, 38) formed in the connecting part, in order to guide through a bottle neck (55) from one compartment to the other.

6. Plastic holder according to claim 5, **characterised in that** the channel (37, 38) in the connecting part is at least locally wide enough to allow through a bottle neck (55) from the bottom side.

7. Plastic holder according to one of claims 4 - 6, **characterised in that** the connecting part lying between two compartments with insertion openings lying essentially in the same plane is provided with an essentially straight wall (8) extending to the flange parts (4) bounding the openings (9).

8. Plastic holder according to one of claims 1 - 7, **characterised in that** it is provided with a grip (10, 11; 39, 40) for carrying the holder.

9. Plastic holder according to claim 8, **characterised in that** the grip comprises two essentially round holes (10, 11; 39, 40) lying in one plane, which are provided in the top side (32) of one or more connecting parts.

10. Plastic holder according to claim 9, **characterised in that** the holes (10, 11; 39, 40) are disposed symmetrically relative to the centre of the top side of the holder.

11. Plastic holder according to claim 9 or 10, **characterised in that** thickened and rounded edges (20; 51, 52) are disposed around the holes.

12. Plastic holder according to one of claims 1 - 11, **characterised in that** it is provided with supporting faces (4, 8; 49, 50) and positioning edges (12; 47, 48), in order to permit stacking of several holders interlinked.

13. Plastic holder according to one of claims 1 - 12, **characterised in that** thickened parts (14) are provided on the top side of the holder, and during stacking of holders containing bottles the kick of a bottle is always positioned.

14. Plastic holder according to one of claims 1 - 13, **characterised in that** thickened parts (12, 13) are provided on the top side of the holder and during stacking of holders containing bottles always lie around the bottom of a bottle and position it.

15. Plastic holder according to claim 12, and claim 14, **characterised in that** at least one of the positioning edges (12) and thickened parts (12, 13) around the bottom of a bottle are integral.

16. Plastic holder according to one of claims 1 - 15, **characterised in that** two rows of compartments are provided, the insertion openings (9) of which compartments are situated along the side edges of the holder.

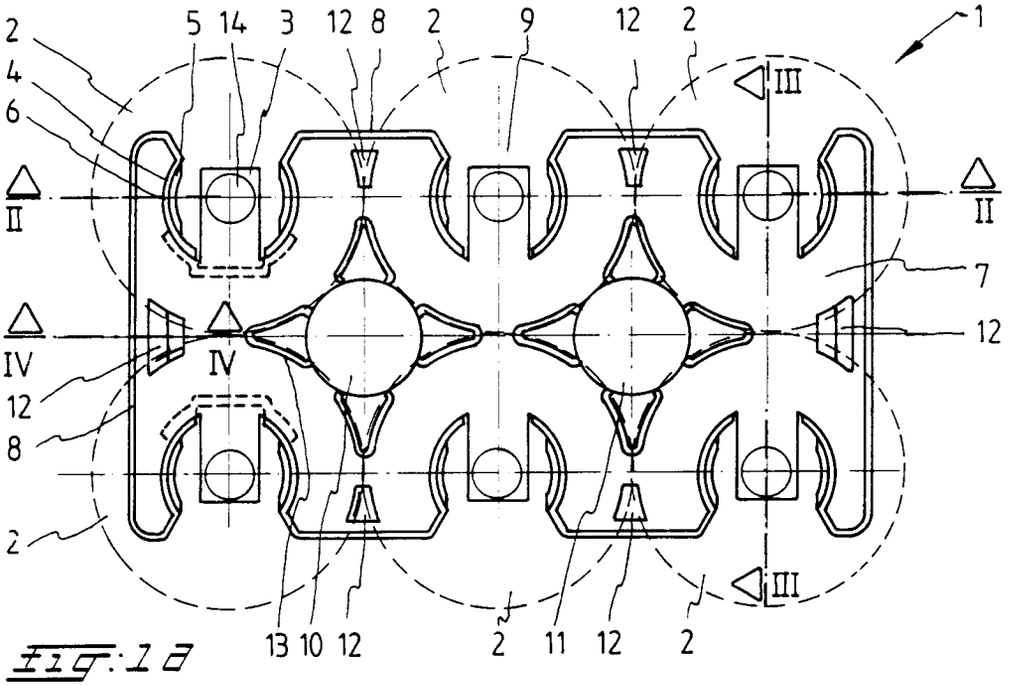

Fig. 1 d

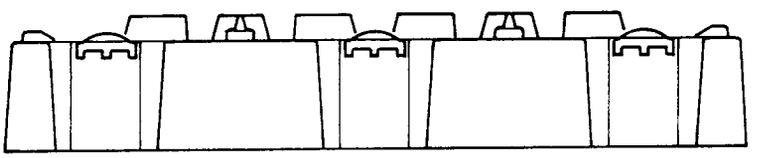

Fig. 1 b

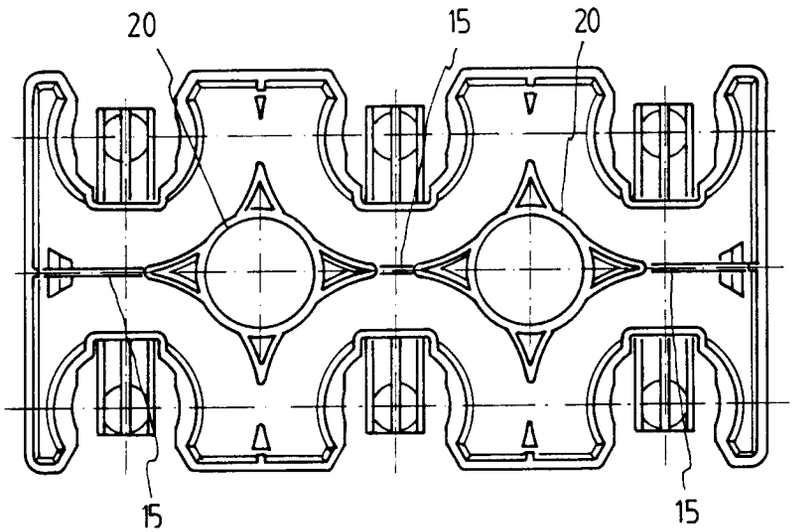

Fig. 1 c

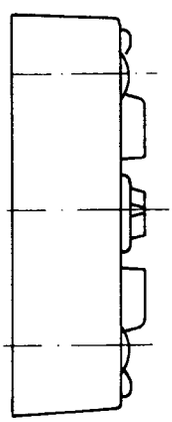

Fig. 1 a

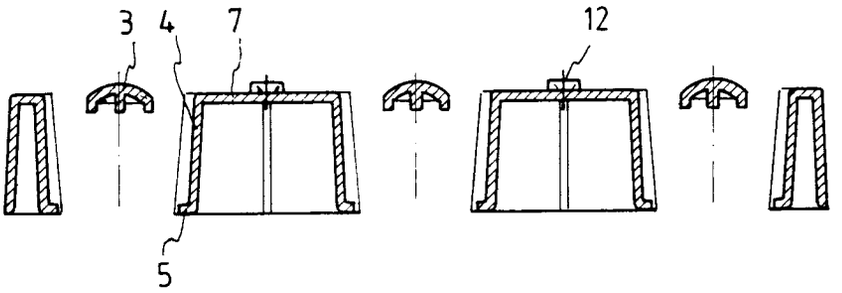

Fig. 2

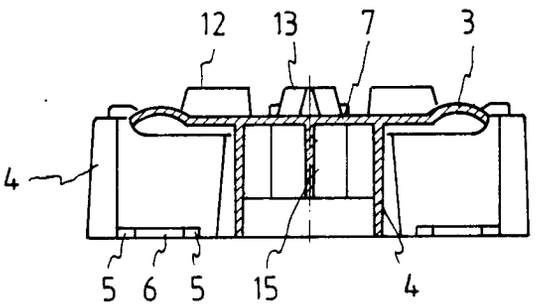

Fig. 3

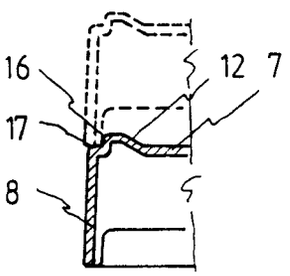

Fig. 4

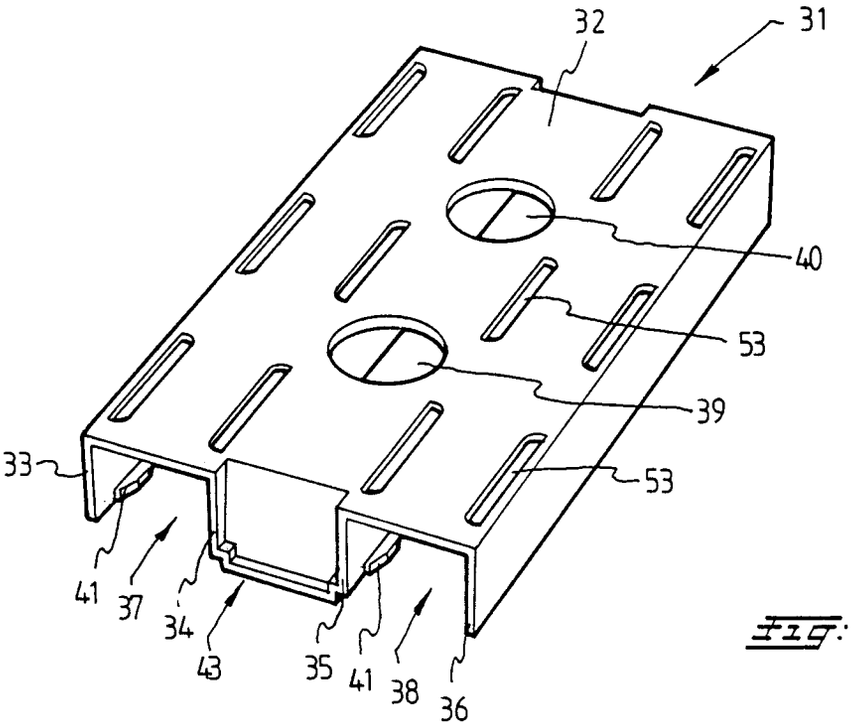
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Fig. 5

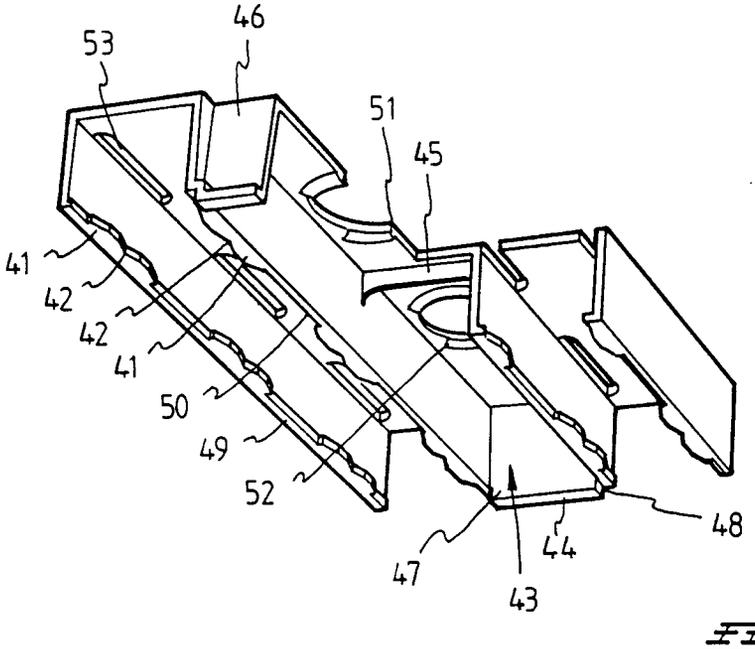
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Fig. 6

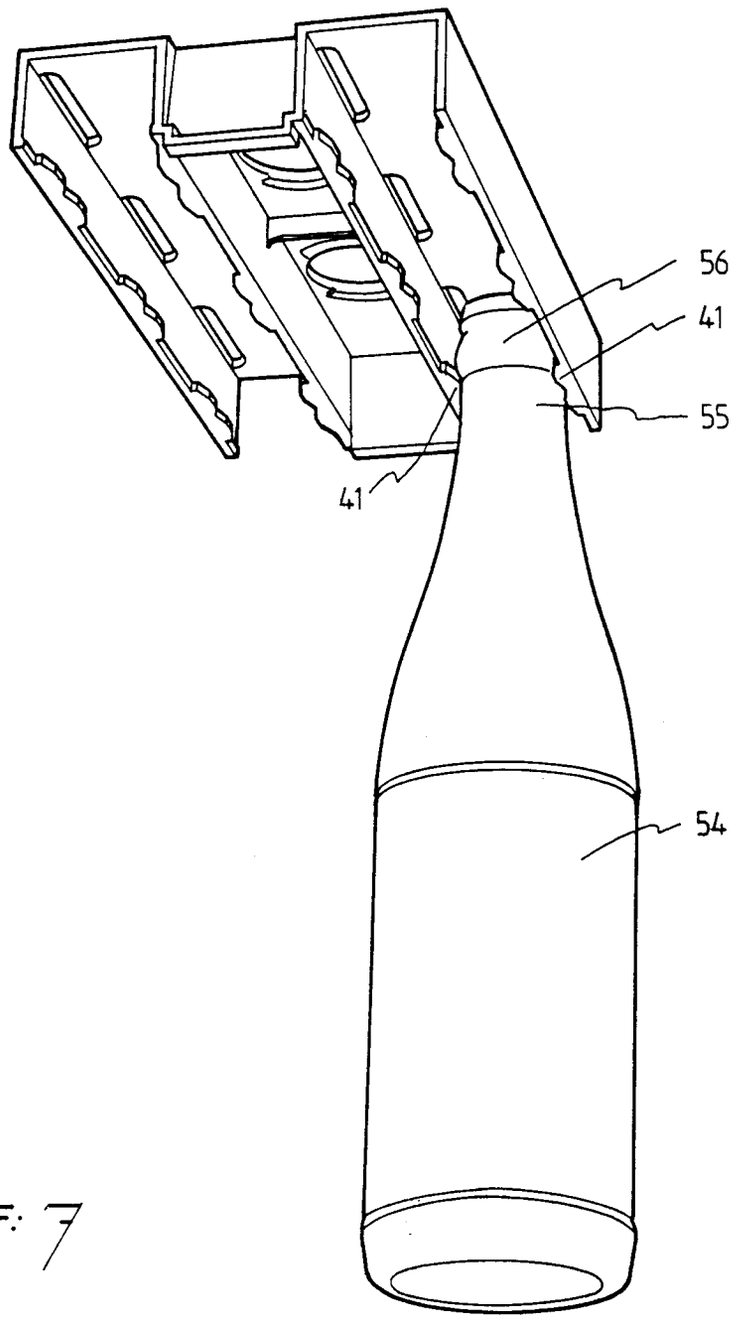

Fig. 7

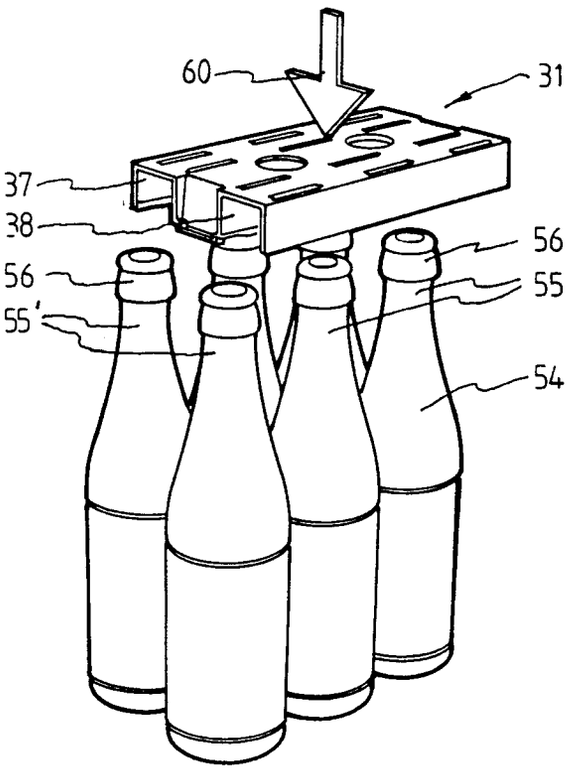

Fig. 8d

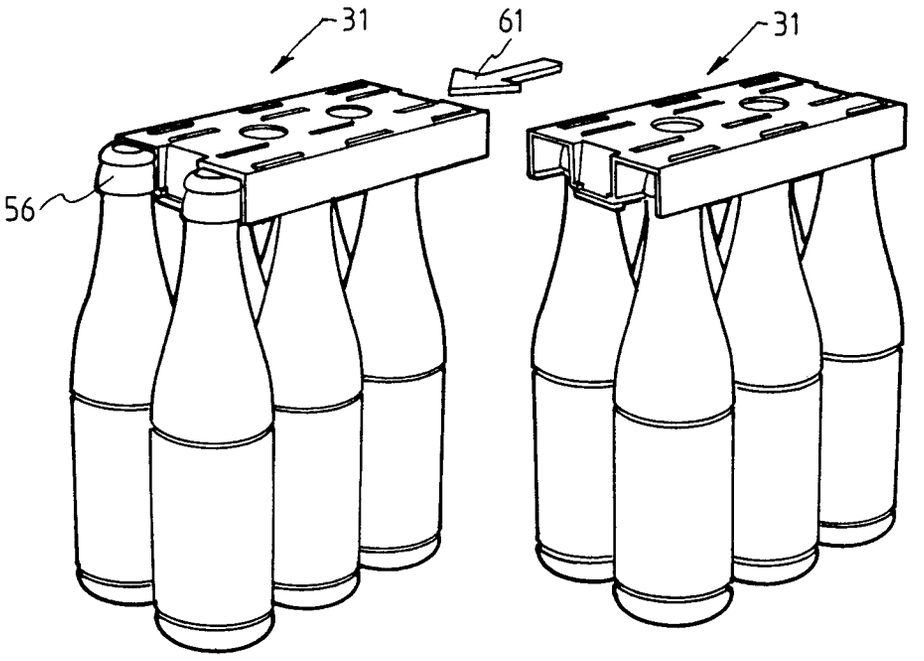

Fig. 8b

Fig. 8c

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 92 20 1969

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)
X	US-A-2 996 329 (GLAZER) * column 3, line 50 - line 64; figures 1,2,10 * * column 2, line 62 - column 3, line 24 *	1,2,4-6,8	B65D71/50
X	US-A-3 036 853 (GLAZER) * column 1, line 53 - column 3, line 53; figures 1-5,20-22 *	1-5,8,16	
X	FR-A-2 313 280 (L'OREAL) * page 12, line 29 - page 14, line 11; figures 7,8 *	1-4,8,16	
X	FR-A-2 284 536 (NO APPLICANT CITED) * page 2, line 40 - page 4, line 1; figures 1,5 *	1,2,7,8	
A	BE-A-687 048 (VANDERHAEGHEN) * page 2, line 1 - line 18; figures 1-4 *	1	
A	GB-A-946 912 (ILLINOIS TOOL WORKS) * page 3, line 29 - line 49; figures 1-11 *	12	TECHNICAL FIELDS SEARCHED (Int. Cl.5) B65D
A	GB-A-2 076 773 (MEAD CORPORATION) * page 1, line 98 - line 105; figures 2,3 *	8-11	
A	DE-U-8 608 485 (STEINBRENNER)		
A	US-A-3 552 612 (GREIS)		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	21 SEPTEMBER 1992	BERRINGTON N.M.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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