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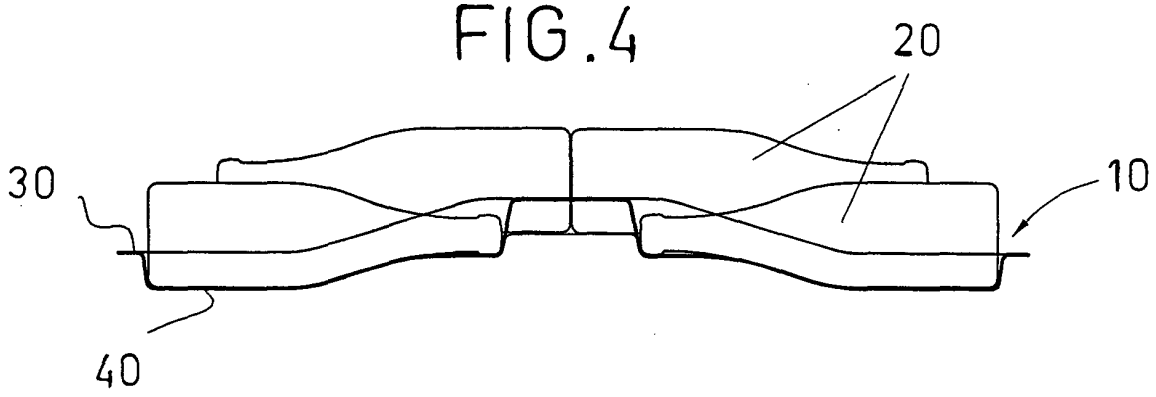
(54) HORIZONTAL BOTTLE STORAGE AND SUPPORT TRAY

(57) This includes a surface with an upper relief which defines a rack to horizontally store bottles. Each rack is defined by a wide area with the opposite area being narrower. Each rack includes the first two compartments which are parallel to each other on the same plane and a second inverted elevated compartment. The narrower area of second compartment is enclosed between the wider areas of the first compartment and is in contact with the wider area of these. The plane of the second compartment is higher than the first two compartments' planes and is equal to the size of the wider area of the compartments.

This saves space when compared to conventional systems because the bottle in the second compartment is inserted more deeply between the pair of compartments.

FIG.4



EP 1 692 968 A1

Description

[0001] This Utility Model Application is for a rack to support and horizontally store bottles with new features giving it numerous advantages as will be shown in this report.

[0002] The invention is for general application for storing bottles of sparkling wine, wine bottles and other packaging of a similar shape.

[0003] The technique for racks horizontally storing bottles are well known as they are essentially formed by a body with a surface in relief. This relief defines a series of compartments which are designed to store each bottle horizontally.

[0004] To store bottles in the appropriate manner, each compartment has a wider area for the base and body of the bottle and an opposite, narrower area for the neck of the bottle.

[0005] On conventional racks the compartments are made up of pairs of parallel and aligned pairs which also define another symmetrical compartment in the narrower area between the pair of compartments. All compartments formed by the relief of the rack surface are on the same plane.

[0006] The main drawback with this configuration is the large space occupied by the bottles when they are stacked up, necessitating an excessive amount of storage space.

[0007] To solve this problem of space, the invention proposes a simple and effective solution. It has been found that this invention uses a simple and economic method to considerably reduce the space occupied by the bottles in the aforementioned storage system.

[0008] To do this the invention proposes a rack with a new configuration designed and developed to fulfil the proposed aims. In particular it is a rack to store bottles as previously described using the previous technique which has a surface manufactured in a laminate. This surface defines an upper and lower relief. The lower relief allows another rack to be enclosed and in this way racks may be stacked one on top of another.

[0009] An important feature of this rack invention is that the configuration of the surface in relief in each set of compartments is defined by the first two parallel compartments running next to each other on the same plane and a second additional inverted compartment on a parallel plane which is elevated with regard to the plane of the first two compartments.

[0010] In this particular configuration the narrower area of the second additional compartment is enclosed between the corresponding narrower areas of the first compartments and is substantially in contact with the wider area of these compartments.

[0011] In this way the plane of the second additional compartment is somewhat elevated. In particular this height is substantially equal to the width of the wider area of the compartments.

[0012] Comparing the specific configuration of the aforementioned rack with this invention, it has been found that it is possible to save 30% of the space used by conventional bottle storage systems.

[0013] In this way the layout of the second additional inverted compartment on an elevated plane with regard to the plane of the first two compartments allows the bottle stored in the second compartment to be inserted more deeply between the aforementioned pair of compartments. Therefore the distance between the end of the first pair of compartments and the opposite end of the second compartment is considerably reduced. In consequence it also reduces the width of each row of compartments.

[0014] On the other hand, the narrower area (for the bottle neck) in the second compartment between the pair of compartments allows the pair of compartments to be closer to each other because of the slightly elevated plane which is formed by the second compartment. In consequence the length of each row is also considerably reduced, because, as previously stated, the distance between each compartment in the aforementioned pair of compartments is reduced.

[0015] Preferably, the relief of the rack is formed by at least two rows of these compartments. Each row has a length which is predetermined by each set of three compartments (that is to say, the first pair and the second compartment inserted between them) and a length which depends on the number of sets of compartments in the rack.

[0016] In this configuration of two or more rows, the aforementioned first, parallel compartments in each set of compartments may be laid out symmetrically within the different rows or laid out in the same direction.

[0017] The advantages of the invention will be clearer with the description of an example of a rack to support and horizontally store bottles which is given below. This description will be in conjunction with the drawings accompanying it.

[0018] In these drawings:

Figure 1 is an elevation of a rack in accordance with the invention which illustrates several bottles placed on it;

Figure 2 is a top view which illustrates the bottles laid out in figure 1;

Figure 3 is an elevation of several racks in the invention stacked one on the other;

Figure 4 is an elevation of the bottles on the rack in cross-section in plane AA' in figure 1;

Figure 5 is an elevation of the bottles on the rack in cross-section in plane BB' in figure 1.

[0019] The drawings illustrate a possible practical layout of a rack in accordance with the invention which has been given the number (10) as a reference.

[0020] The rack (10) is for storing bottles in an effective way and occupying minimal space (20).

[0021] This rack is manufactured in a laminate material

defining an upper surface in relief (30) and a lower in relief (40). The lower relieve (40) is designed in such a way that it encloses another rack (10) to be able to stack other racks (10) one on top of each other, as shown in the example in figure 3 in the drawings.

[0022] The aforementioned relief on the rack surface (10) is specific to the invention. More specifically, the relief defines a series of compartments designed to store bottles (20).

[0023] As the drawings illustrate, the series of compartments is formed by the first compartments (50, 60). These compartments (50, 60) are the same size and substantially run along side each other. The compartments (50, 60) are parallel and are on the same plane designated by (P1) in the drawings.

[0024] The series of compartments is completed by a second, additional compartment (70). This additional compartment (70) is on a plane (P2) which is slightly elevated and parallel to plane (P1) on the first two compartments (50, 60).

[0025] With the described configuration for rack (10) illustrated in the drawings the narrower area (103) on the second additional compartment (70) is completely enclosed between the corresponding narrower areas (100) in the compartments (50, 60), which is substantially in contact with the wider area (101) for them, as shown by figure 2 of the drawings attached to this report.

[0026] In this way, the plane (P2) on which the second additional compartment (70) is supported, is slightly elevated with regard to plane (P1) as previously stated. The height to which this plane (P2) is elevated with regard to plane (P1) is substantially equivalent to the width of the wider area (101, 102) for compartments (50, 60, 70). This is a suitable height for the bottle (20) stored in the compartment (70) to be more deeply inserted between the pair of compartments (50, 60), thereby reducing the distance between the end of the pair of compartments (50, 60) and the opposite end of the compartment (70) Consequently, the total width of each row of compartments (50, 60, 70) is reduced.

[0027] The fact that plane (P2) of compartment (70) is elevated by a distance also allows the narrower area (100, 103), that is to say, the area for the bottle neck (20) to be advantageously reduced and in consequence the length of each row of compartments is also shorter.

[0028] The surface to the rack (10) may be formed by two or more rows of compartments (50, 60, 70). The width of each row is determined by the compartments (50, 60, 70) and the length of a row will depend on the number of compartment sets (50, 60, 70) in the rack (10) - figure 2 shows two of these sets of compartments -.

[0029] In this described configuration of the rack (10) formed by at least two rows (each formed by a series of compartments (50, 60, 70)), the compartments (50, 60) in each set of compartments may be laid out in symmetrical rows (as shown in the drawings) or may be laid out in the same direction.

[0030] As the composition of this invention for racks (10) horizontally supporting and storing bottles has been sufficiently described with attached drawings, it is understood that any modification to the same, where these are judged to be appropriate and where the essential features of the summarised invention stay the same, will mean that the following claims will remain unaltered.

Claims

1. Rack (10) for horizontally supporting and storing bottles (20) which includes a surface with an upper relief (30) which defines several sets of compartments (50, 60, 70) designed to accept a bottle in each (20) laid out horizontally, each compartment (50, 60, 70) defining a wider area (101, 102) and an opposite narrower area (100, 103). This rack (10) is **characterised by** the fact that each set of compartments (50, 60, 70) is defined by the first two compartments (50, 60) which are equal in length, parallel and substantially running together on the same plane (P1) and a second, additional, inverted compartment (70) on an elevated plane (P2) with regard to the aforementioned plane (P1) for the aforementioned two first compartments (50, 60). The narrower area (103) on the second, additional compartment (70) is enclosed between the corresponding narrower areas (100) on the aforementioned first two compartments (50, 60) and substantially in contact with the wider area (101) on the same.

2. Rack (10) for horizontally supporting and storing bottles (20) according to the 1st claim, **characterised by** the fact that plane (P2) of the aforementioned second, additional compartment (70) is elevated with regard to plane (P1) where the first two compartments (50, 60) are located. This height is the same size as the wider area (101, 102) for the compartments (50, 60, 70).

3. rd- Rack (10) for horizontally supporting and storing bottles (20) according to the 1st claim, **characterised by** the fact that the aforementioned relief is formed by at least two rows of the aforementioned sets of compartments (50, 60, 70).

4. th- Rack (10) for horizontally supporting and storing bottles (20) according to the 3rd claim, **characterised by** the fact that the aforementioned first parallel compartments (50, 60) in each set of compartments have different rows laid out symmetrically.

5. th- Rack (10) for horizontally supporting and storing bottles (20) according to the 3rd claim, **characterised by** the fact that the aforementioned first compartments (50, 60) in each set of compartments have different rows in the same direction.

6. th- Rack (10) for horizontally supporting and storing bottles (20) according to the 1st claim, **characterised by** the fact that the surface of the rack (10) is manufactured in a laminate material.

7. th- Rack (10) for horizontally supporting and storing bottles (20) according to the 1st claim, **characterised by** the fact that the upper relief (30) also defines a corresponding lower relief (40) designed to allow another rack (10) to be enclosed and to allow racks (10) to be stacked one on another.

FIG.1

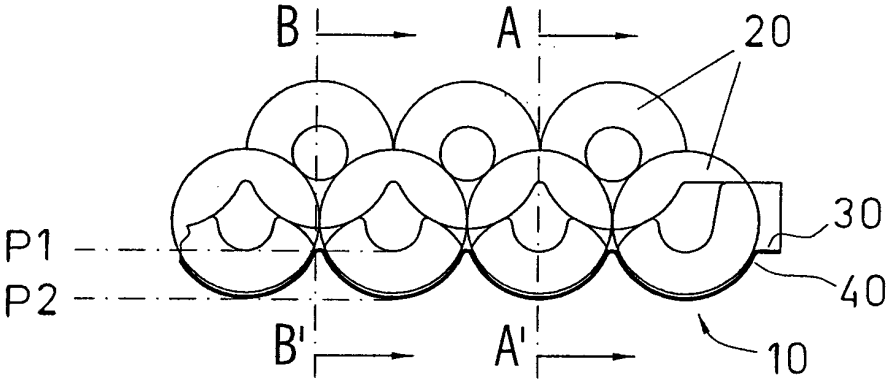


FIG.2

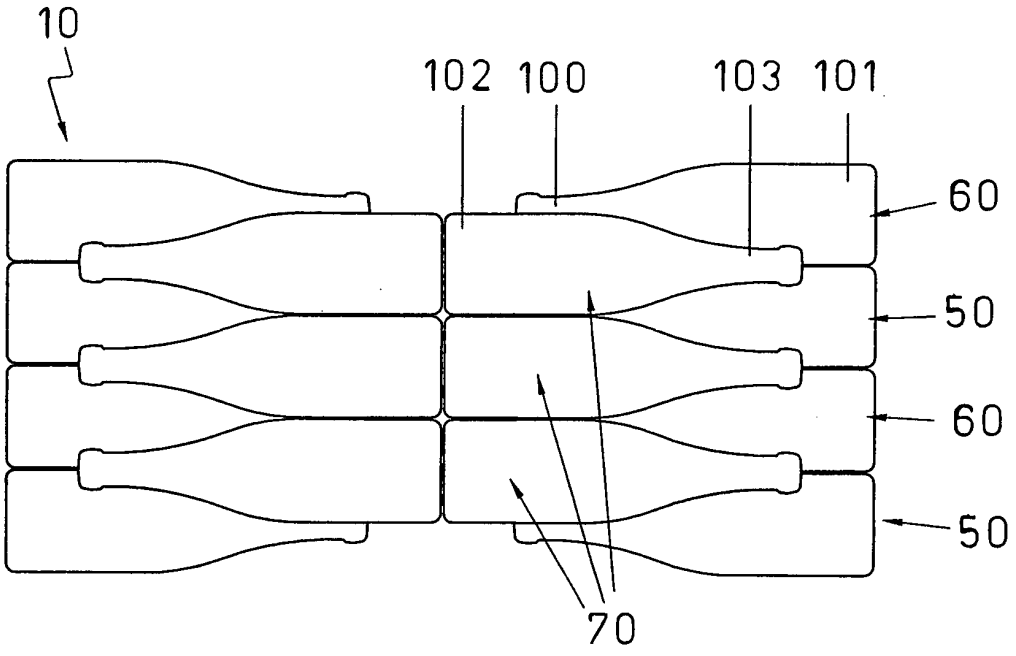


FIG.3

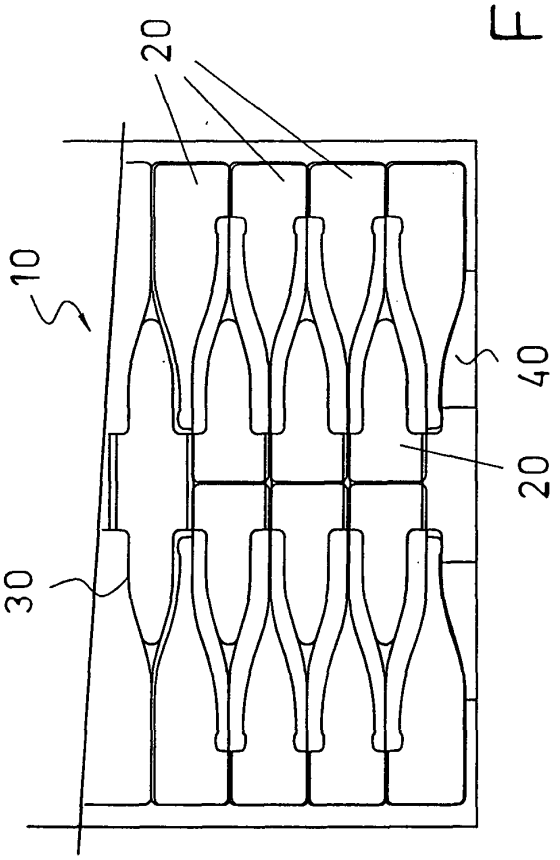


FIG.4

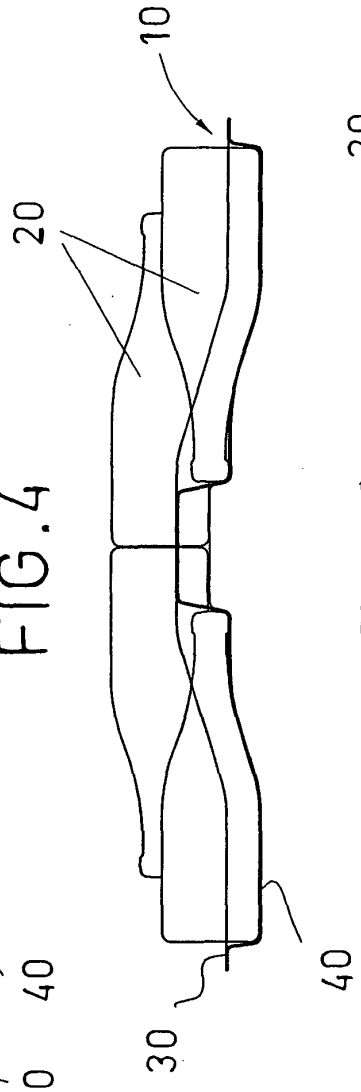
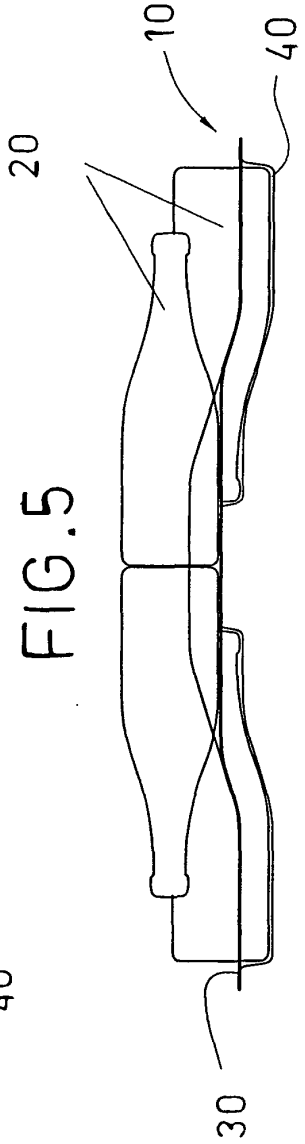


FIG.5



INTERNATIONAL SEARCH REPORT

International application No.
PCT/ ES 2004/000536

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7: A47B73/00

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: A47B73/00; A47F7/28; B65B85/62

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 practicable, search terms used)

CIBEPAT,EPODOC;WPI; JAP

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 2723076 A1 (SAMETO TECHNIFIL) 02.02.1996; Figures 3-4; **claim** 1; Pag 3 line 29 - pag 4 line 18	1-5
Y		5-7
Y	GB 2047661 A (Celulosas Moldeadas Hartmann SA) 03.12.1980; Fig 1-5; **abstract**	5-7
A	FR 2456673 A1 (THIERION Michel) 12.12.1980; **the whole document**	1-7
A	FR 1577963 A (ETABLISSEMENTS NICOLAS); 14.08.1969; **the whole document**	1-7
A	FR 2600983 A1 (CHAMPAGNE PERRIER JOUET, Société anonyme et BAVERET André) 08.01.1988; **the whole document**	1-7

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
17 March 2005 (17.03.05)	**06 April 2005 (06.04.05)**
Name and mailing address of the ISA/ **S.P.T.O.**	Authorized officer
Facsimile No.	Telephone No.

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT
Information on patent family members

International Application No
PCT/ ES 2004/000536

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Form PCT/ISA/210 (patent family annex) (July 1992)