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(71) Applicant: **Bianucci di Bianucci S. & C. SNC**
55100 Lucca (IT)

(72) Inventor: **Bianucci, Stefano**
LUCCA (IT)

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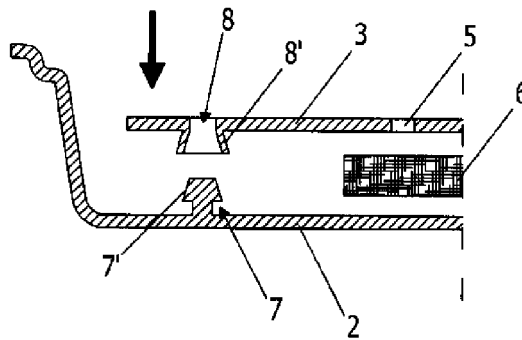
(74) Representative: **Marcio', Paola et al**
Ing. Mari & C. SRL
Via Garibotti, 3
26100 Cremona (IT)

(54) Draining tray for containing fresh food

(57) The invention relates to a draining tray (1) for containing fresh food, comprising a first bottom layer (2) and side walls (4), characterized in that it comprises a

second bottom layer (3), arranged in the inside of said tray (1) and creating a hollow space (1) with said first bottom layer (2), wherein said second bottom layer is provided with through holes (5).

Fig. 7



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Description

[0001] The invention relates to the sector of packaging of food products for human consumption.

[0002] More in detail, the invention relates to a draining tray for containing fresh food, and is particularly (but not exclusively) directed at the packaging of meat, fish or cheese.

[0003] According to prior art, trays for containing fresh food, such as meat, on sale in supermarket counters, are generally made of paper or plastic material, such as expanded polystyrene, and once filled they are wrapped and sealed with a transparent film.

[0004] These trays, prevalently quadrangular in plan, comprise a bottom layer and raised side walls to retain the product.

[0005] In some variants available on the market, said bottom layer is provided with small holes, arranged homogeneously on the surface thereof.

[0006] Said holes are blind and form a sort of micro-reservoir in which the liquid released by the fresh food contained in the tray, such as the blood released by meat or the buttermilk released by cheese, percolates and accumulates.

[0007] These trays have one noteworthy limitation: they are unable to permanently remove and isolate the liquids released by the foods contained therein.

[0008] The blood produced by meat, or the milk released by cheese, albeit in minimum quantity, disadvantageously remain in contact with the fresh food and damage its organoleptic properties, quality and freshness.

[0009] These released liquids are in fact the first to decompose, creating unpleasant odors and becoming darker or yellowish in color, which without doubt does not attract buyers.

[0010] Any blind holes provided on the bottom layer of the trays are very small and of limited volume and can only contain a part of the liquids released. Moreover, when the trays are moved from one shelf to another or handled without holding them perfectly horizontal, or transported loosely in a shopping bag, the liquids flow out of the holes and once again flood the trays.

[0011] Some trays are provided on the inside thereof, simply placed on the bottom layer and interposed between this layer and the food contained, with a layer of absorbent material, capable of retaining said liquids: disadvantageously, once the material is wet it remains in contact with the food, and therefore does not solve the problem of contamination.

[0012] The invention intends to overcome these limits by producing a tray for containing fresh food which is draining, i.e. structured to rapidly remove liquids released by the food and confine them in a separate space, preventing its deterioration and preserving its inviting appearance.

[0013] These aims are achieved with a draining tray for containing fresh food, comprising a first bottom layer and side walls, **characterized in that** it comprises a sec-

ond bottom layer, arranged in the inside part of said tray and creating a hollow space with said first bottom layer, wherein said second bottom layer is provided with through holes.

5 [0014] According to an aspect of the invention, said hollow space comprises absorbent material suitable for food usage.

[0015] In particular, said absorbent material suitable for food usage is a cellulose sheet.

10 [0016] According to a further aspect of the invention, said first bottom layer comprises rapid connecting means for said second bottom layer. In particular, said rapid connecting means comprise discontinuous structures protruding from said first bottom layer towards the inside of the tray.

15 [0017] Moreover, said second bottom layer comprises interruptions adapted to be engaged by said discontinuous protruding structures.

[0018] According to a further aspect of the invention, said second bottom layer comprises female shaped structures protruding, at the interruptions, from said second bottom layer towards said first bottom layer, so as to cooperate by interference with said discontinuous protruding structures.

20 [0019] According to a possible embodiment of the invention, said second bottom layer belongs to an inside lining structure of said tray, in turn comprising further side walls. In particular, the size of said hollow space is obtained by changing the heights of said side walls.

25 [0020] According to a very advantageous aspect of the invention, said first and second bottom layers, said discontinuous protruding structures and said absorbent sheet are made of natural biodegradable material.

[0021] The invention presents numerous advantages: the tray thus shaped is more hygienic as it is able to permanently and definitively isolate the liquids released from the food contained therein, confining them in a space outside that in which the food product is contained.

30 [0022] The through holes provided on the second bottom layer enable drainage of the liquids which reach the hollow space, produced with the first closing bottom layer, where they are contained permanently, and optionally absorbed, by the specific layer of absorbent material.

[0023] The hollow space and the absorbent material have a considerable volumetric capacity and are able to retain the whole of the quantity of liquid produced, without the risk of return to the containing portion of the tray.

35 [0024] The draining tray according to the invention is advantageously always clean and dry, and the product is more attractive to the eyes of buyers.

[0025] Coupling between said first and second bottom layers takes place by pressure alone and with the aid of rapid connecting means obtained directly from said first bottom layer, and therefore without the addition of glues that can be harmful if placed in direct contact with foods.

40 [0026] All the components that form the tray according to the invention are made of natural materials, biodegradable, and above all suitable for food usage.

[0027] The advantages of the invention will be more apparent below, in the description of preferred embodiments, provided by way of non-limiting example, and with the aid of accompanying drawings wherein:

Fig. 1 represents a generic exploded cross section of a draining tray for containing fresh food according to a first embodiment of the invention;

Figs. 2 and 3 represent, in an axonometric top view, two components of the tray according to the invention;

Fig. 4 represents, in an axonometric bottom view, the tray according to the invention;

Fig. 5 represents an assembled detail of the section of Fig. 1, wherein the proportions are changed for clarity of representation;

Fig. 6 represents a generic exploded cross section of a draining tray for containing fresh food according to a possible further embodiment of the invention;

Fig. 7 represents a detail of a generic exploded cross section of a draining tray according to a further embodiment.

[0028] With reference to Figs. 1-5, there is shown a draining tray 1 for containing fresh food with a rectangular plan, comprising a first bottom layer 2, a second bottom layer 3 and raised retaining side walls 4.

[0029] Said first bottom layer 2 and second bottom layer 3 are maintained at a distance from each other, defining therebetween a hollow space I.

[0030] Said second bottom layer 3 is provided with through holes 5, adapted to place the area of the tray 1 for containing the fresh food in communication with said hollow space I, and to allow the liquids L produced by the foods to percolate, as illustrated in the section of Fig. 5.

[0031] On the inside of said hollow space I there is arranged a sheet of absorbent material 7 for food usage, i.e. suitable to come into contact with food, adapted to retain said liquids L permanently.

[0032] Said first bottom layer 2 comprises rapid connecting means for said second bottom layer 3.

[0033] Said rapid connecting means are obtained by a plurality of discontinuous protruding structures 7, arranged in a discontinuous manner along the perimeter of said first bottom layer.

[0034] Said protruding structures 7 are obtained, for example, by relief molding of the first bottom layer, ensuring continuity of the material.

[0035] Said second bottom layer 3 instead comprises interruptions 8 (for example, windows, slots, holes, etc.), arranged along its perimeter and adapted to be engaged by said protruding structures 7 in substantially irreversible manner.

[0036] Coupling between said first 2 and second 3 bottom layer, and therefore insertion of said protruding structures 7 in said interruptions 8, takes place through snap fastening thereof, without the use of glues or adhesives,

which are known to be unsuitable for food usage.

[0037] With particular reference to the section of Fig. 1, said protruding structures 7 are mushroom shaped, having a rounded head adapted to occupy through interference the interruptions 8, of hole type, obtained on said second bottom layer 3.

[0038] With reference to Fig. 7, which illustrates an embodiment of said rapid connecting means, said protruding structures 7 are again mushroom shaped, but having a truncated-cone shaped head, with sloping side walls 7' adapted to cooperate through interference with specific cup-shaped and projecting female structures 8', at the interruptions 8, from said second bottom layer 3 towards said first bottom layer 2.

[0039] Cooperation between the head of the mushroom structures and the interruptions 8 and between said sloping side walls 7' and said female structures 8' offers even more stable coupling between the two bottom layers 2, 3 of the tray 1, regardless of the position it takes.

[0040] In an embodiment not shown, said second bottom layer 3 can be provided with grooves and raised areas of known type, useful to maintain the food slightly raised and further facilitate drainage of the liquids released into the holes 5.

[0041] With particular reference to Fig. 6, said second bottom layer 3 belongs to an inside lining structure of said tray 1, in turn shaped as a tray with a bottom layer 3 and raised side walls 4', and adapted to internally cover said first bottom layer 2 and the related retaining side walls 4, again defining a hollow space I.

[0042] In particular, the width of said hollow space I is produced by changing the heights of the side walls 4 and 4' of the tray 1 and of the lining structure.

[0043] In this particular embodiment, coupling between said first 2 and second 3 bottom layer is obtained through interference by a slight curvature of the edges of the side walls 4 of both trays.

[0044] In all the embodiments, said tray 1, said second bottom layer 3 or said inside lining structure, said protruding structures 7 and said absorbent sheet 6 are made of natural biodegradable material.

[0045] In particular, all components of the trays are made of a biodegradable material deriving from the crushing and cooking of waste from sugar cane, or deriving from Mater-Bi® corn starch, with the addition of a liquid additive adapted to make them watertight, while the sheet of absorbent material is obtained from pure cellulose.

Claims

1. Draining tray (1) for containing fresh food, comprising a first bottom layer (2) and side walls (4), **characterized in that** it comprises a second bottom layer (3), arranged in the inside of said tray (1) and creating a hollow space (I) with said first bottom layer (2), wherein said second bottom layer is provided with

through holes (5).

2. Draining tray (1) according to claim 1, **characterized in that** said hollow space (I) comprises absorbent material suitable for food usage. 5
3. Draining tray (1) according to claim 2, **characterized in that** said absorbent material suitable for food usage is a cellulose sheet (6). 10
4. Draining tray (1) according to claim 1, **characterized in that** said first layer (2) comprises rapid connecting means for said second layer. 15
5. Draining tray (1) according to claim 4, **characterized in that** said rapid connecting means comprise discontinuous structures (7) protruding from said first bottom layer (2) towards the inside of said tray. 20
6. Draining tray (1) according to claim 5, **characterized in that** said second bottom layer (3) comprises interruptions (8) adapted to be engaged by said discontinuous protruding structures (7). 25
7. Draining tray (1) according to claim 6, **characterized in that** said second bottom layer (3) comprises female shaped structures (8') protruding, at the interruptions (8), from said second bottom layer (3) towards said first bottom layer (2), so as to cooperate by interference with said discontinuous protruding structures (7). 30
8. Draining tray (1) according to claim 1, **characterized in that** said second bottom layer (3) belongs to an inside lining structure of said tray (1), in turn comprising further side walls (4'). 35
9. Draining tray (1) according to claim 7, **characterized in that** the size of said hollow space (I) is obtained by changing the heights of said side walls (4, 4'). 40
10. Draining tray (1) according to claim 1, **characterized in that** said first (2) and second (3) bottom layers, said discontinuous protruding structures (7) and said absorbent sheet (6) are made of natural biodegradable material. 45

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Fig. 1

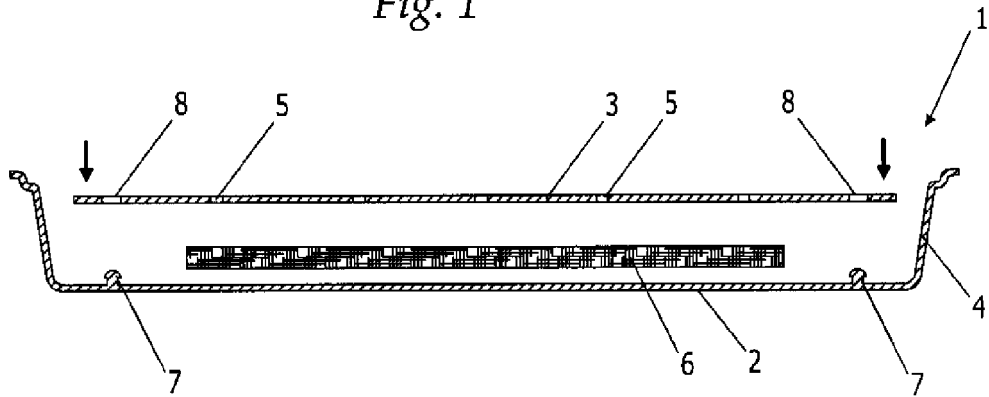


Fig. 2

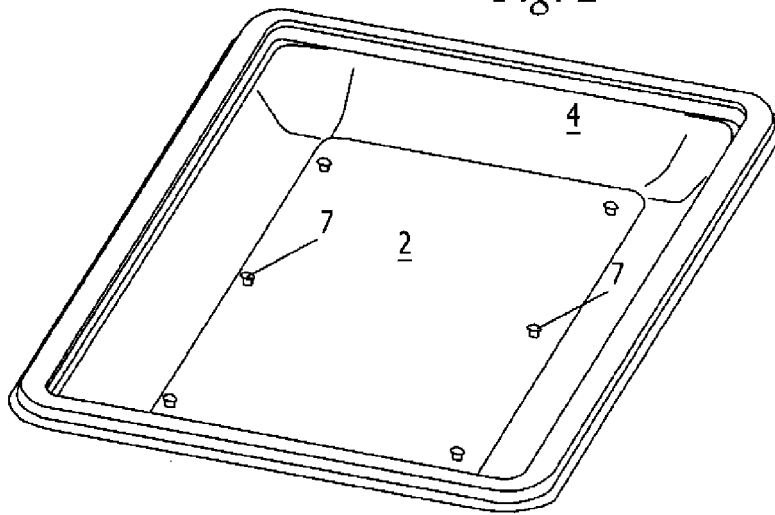


Fig. 3

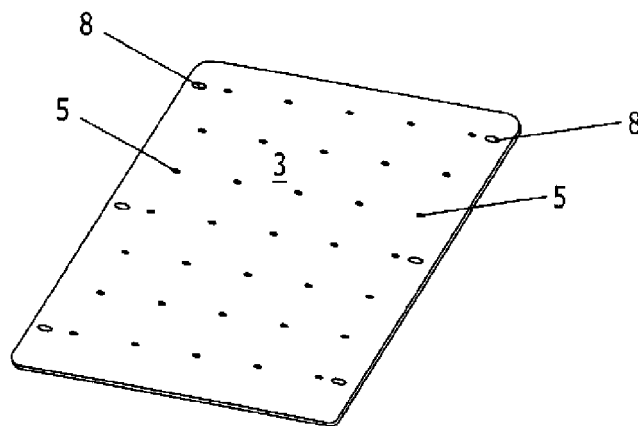


Fig. 4

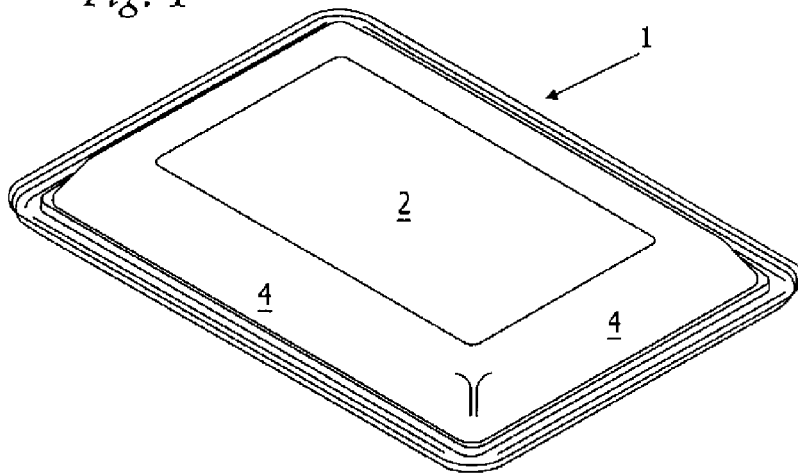


Fig. 5

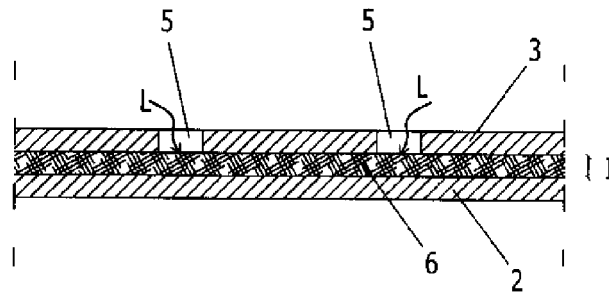


Fig. 6

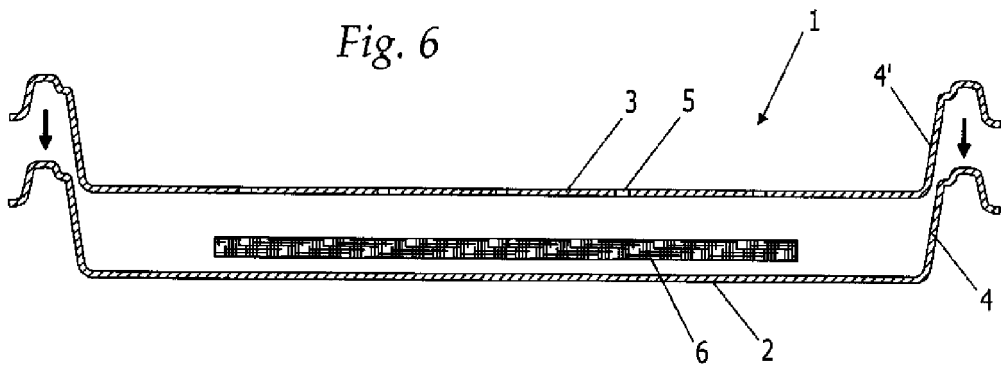
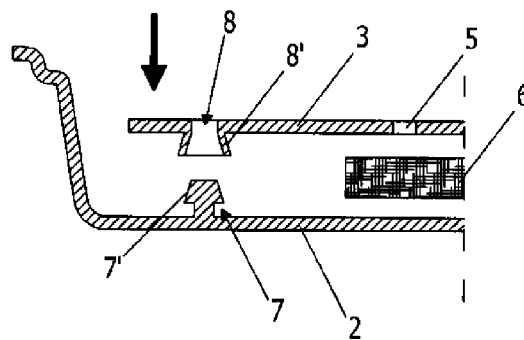


Fig. 7





EUROPEAN SEARCH REPORT

Application Number
EP 12 17 3717

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2009/020805 A1 (MEADWESTVACO CORP [US]; GELARDI JOHN A [US]) 12 February 2009 (2009-02-12)	1,2,4, 8-10	INV. B65D81/26
Y	* paragraph [0017] - paragraph [0018] * * paragraph [0021] - paragraph [0024]; figures 1, 3 * * paragraph [0031] *	3	
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A	* page 31, line 13 - line 20; figures 3, 20A *	6,7	
Y	GB 863 095 A (ARMOUR & CO) 15 March 1961 (1961-03-15) * page 2, line 41 - line 46 *	3	
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 1 October 2012	Examiner Bridault, Alain
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 12 17 3717

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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01-10-2012

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82