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(54) **Egg container**

(57) A container for loose foodstuffs, particularly eggs, comprising a traylet (1) fit for containing eggs (4-4a) in an ordered rectangular arrangement of as many respective containing places, and a concave lid (2), intended in its closing onto the traylet, to turn its con-

cavity towards the latter, wherein said ordered rectangular arrangement of egg places is defined by partition septa (3-3c,5-5b) crossed with each other, the profile whereof extends to occupy all the inner encumbrance of said concavity of said lid in the closed position of the same onto the traylet.

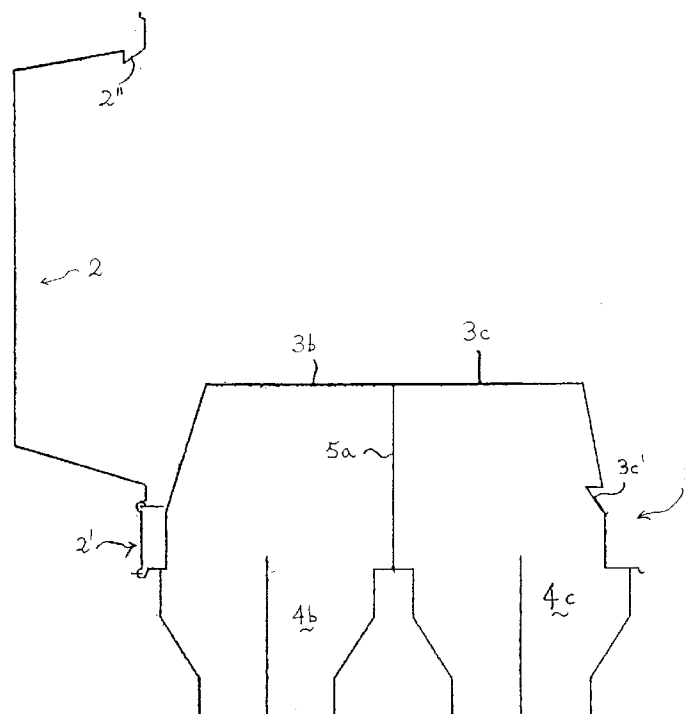


FIG. 1

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Description

The present invention relates to a container for loose foodstuffs, particularly eggs.

In the present description by "egg containers" those containers are meant for packaging normal size eggs, usually, as is known, six eggs, for the commercialization of the eggs themselves. They provide a traylet having a series of housings, one for each egg, the housings being separated by diaphragms that avoid the reciprocal collision of the eggs. In the usual commercial egg containers for six eggs two rows are dealt with put side by side, each one with three egg places. On the traylet a lid goes to close itself, hinged by a long side of its rectangular perimeter. The girdle line of the egg container, that is the rim of the traylet whereagainst the lid goes to abut when closing itself, finds itself at half the height of the eggs, arranged vertically with their tips turned upwards.

The types most commonly used and representative of the state of the art are the one in plastics and the one in wood pulp.

In the plastics type the closing of the egg container is deputed to a system represented by protuberances of the plastics layer on the rim of the traylet that go to snappingly engage themselves in corresponding recesses of the plastics layer on the rim of the lid.

In the wood pulp type the wall of the traylet presents hooking assemblies intended to engage themselves in corresponding cuts on the wall of the lid when this one closes itself onto the traylet itself.

A critical feature of egg containers is their aptitude to be stacked - or, more generally, to support loads of a certain magnitude anyhow applied on their lid - without damage.

In this connection, for instance, a type of egg container presents cone frustum protuberances of the bottom of the traylet up to the level of the closing of the upper flat bottom of the lid, here making up a reaction constraint element to the loads that go to burden thereupon.

The present invention takes the steps from the consideration that no one of the presently known egg containers turns out to be satisfying in connection with the closing system and with the resistance to the loads impressed on the lid.

The egg containers of the state of the art are not so satisfying neither from the viewpoint of the packaging of eggs, nor of their performance during transportation, distribution and storing.

In the automated packaging lines the egg containers not always close themselves well, owing both to the closing system which is inherently unreliable, and to direction errors (wrong side inclination) of the lid towards the traylet by the automatic machine.

In the stacking, for transportation and storing of the product, the packages do not bear the load of the packages arranged thereon and many eggs are so destroyed.

Therefore, it is largely felt the exigency of an egg container that presents a reliable closing system, that does not suffer from the direction errors of the lid onto the traylet in the automatic egg packaging stage, and that withstands the loads it is intended to bear in its lifetime.

The object of the present invention is to satisfy such an exigency.

Such an end is achieved according to the teaching of the present invention by providing the formation of partition septa among the egg places in the traylet. The profile of such septa is brought to occupy all the inner encumbrance of the lid in the closed position thereof on the traylet. Moreover, such septa are provided with a deviation of the profile thereof on the portion that is turned onto the sides of the egg container whereupon the lid is not hinged, but goes, on the contrary, to close itself, from rectilinearity into a sawtooth recess making up a unidirectional hooking means turned toward the traylet, that is to say such as to be engaged by a complementary means in the closing sense of the lid onto the traylet and to offer resistance to the disengagement in the opposite sense, of the opening of the lid. The lid is endowed with corresponding reliefs so shaped as to be fit for hookingly engaging themselves with said recesses.

So, such septa perform the double function of a closing system and of a reaction constraint means against the loads on the lid during the lifetime of the package.

The closing system made up of the hooking means offered by the recesses of the septa and the reliefs of the lid is simple and reliable: the resistance to the closing is very low, and on the contrary the resistance is considerable to the opening by the forces tangential to the side wall of the egg container that can be encountered by the egg container itself during its lifetime. The resistance to the opening will be, however, a minimum against forces applied perpendicularly or almost perpendicularly to the wall of the egg container, whereby it will be very easy for the end consumer to open the same without effort.

Moreover, the egg container according to the present invention is not responsive to the direction errors of the closing of the lid by an automatic machine, because the septa make up a structure that inherently guides the lid in its closing onto the traylet according to a correct movement.

Therefore, the subject of the present invention is a container for loose foodstuffs, particularly eggs, comprising a traylet fit for containing eggs in an ordered rectangular arrangement of as many respective containing places, and a concave lid, intended in its closing onto the traylet, to turn its concavity towards the latter, wherein said ordered rectangular arrangement of egg places is defined by partition septa crossed with each other, the profile whereof extends to occupy all the inner encumbrance of said concavity of said lid in the closed position of the same onto the traylet.

It is also the subject of the present invention such a container, wherein further the profile part of some of or all said septa that is turned onto the sides of the container itself is endowed with recesses fit for defining hooking means that let themselves to be engaged in the closing sense of the lid and offer resistance to disengagement in the opening sense of the same by corresponding complementary hooking means arranged on the inner, concave surface of the lid.

The present invention will be best understood based on the following detailed disclosure of its preferred embodiment, only given as a matter of example, absolutely not of restriction, with reference to the accompanying drawings, wherein:

- FIGURE 1 is a median transverse section view of a 2x3 egg container according to the present invention, in the open condition;
- FIGURE 2 is a median transverse section view of the same, in the closed position, and
- FIGURE 3 is a schematic top view of the traylet of the egg container according to the present invention.

As illustrated in the FIGURES, the egg container of the present invention comprises a traylet 1 for containing eggs, and a lid 2, hinged on a long side of the traylet. It is here exemplified the usual case of a traylet for six eggs, with a matrix, or ordered rectangular arrangement, of 2x3 places for as many respective eggs, 4, 4a, 4b, 4c, 4d, 4e.

According to the present invention, such places are separated by three crossed partition septa, one longitudinal, two transversal, that individuate the rectangular matrix of places, which crossing with each other mutually partition themselves in flaps 3, 3a and 3b, 3c for the transverse septa and 5, 5a, 5b for the longitudinal septum, individuating and partitioning contiguous places.

As can be seen in FIGURE 1, the lid 2 presents a deep concavity turned towards the traylet. The septa above extend to occupy all the inner encumbrance of such a concavity with the lid closed, as shown in FIGURE 2.

According to a modification, said septa are upperly endowed with unloading recesses, arriving upwards up to the inner level of the lid, in the closed position thereof, only in correspondence with the side parts and of the central part of their profile.

On the flaps turned onto the sides of the traylet not interested by the hinging of the lid, i.e. on flaps 4, 4D; 3a, 3c and on the profile part that is turned to the sides of the traylets, sawtooth cuts or recesses are provided, one of which, 3c', visible in FIGURES 1 and 2, intended to engage themselves with as many respective corresponding reliefs on the inner (concave) profile of the lid, one of which, 2", visible in FIGURES 1 and 2. Recesses and reliefs are of such shapes as to cooperate in mutual hooking, easily (with a low force) hookingly engaging

with each other in the closing sense of the lid onto the traylet and offering resistance to the disengagement in the opposite, opening sense.

The present invention has been disclosed with reference to a specific embodiment thereof, but it is to be expressly understood that additions, variations and/or omissions can be made thereto, without so departing from the relevant scope of protection, which remains only defined by the appended claims.

Claims

1. A container for loose foodstuffs, particularly eggs, comprising a traylet fit for containing eggs in an ordered rectangular arrangement of as many respective containing places, and a concave lid, intended in its closing onto the traylet, to turn its concavity towards the latter, wherein said ordered rectangular arrangement of egg places is defined by partition septa crossed with each other, the profile whereof extends to occupy all the inner encumbrance of said concavity of said lid in the closed position of the same onto the traylet.
2. The container for loose foodstuffs according to claim 1, wherein said partition septa are upperly endowed with unloading recesses, by arriving upwards up to the inner level of the lid, in the closed position of the latter, only in correspondence with the side parts and the central part of their profile.
3. The container for loose foodstuffs according to claim 1 or 2, further characterized in that the profile part of some of or all said septa that is turned onto the sides of the container itself is endowed with recesses fit for defining hooking means that let themselves to be engaged in the closing sense of the lid and offer resistance to disengagement in the opening sense of the same by corresponding complementary hooking means arranged on the inner, concave surface of the lid.

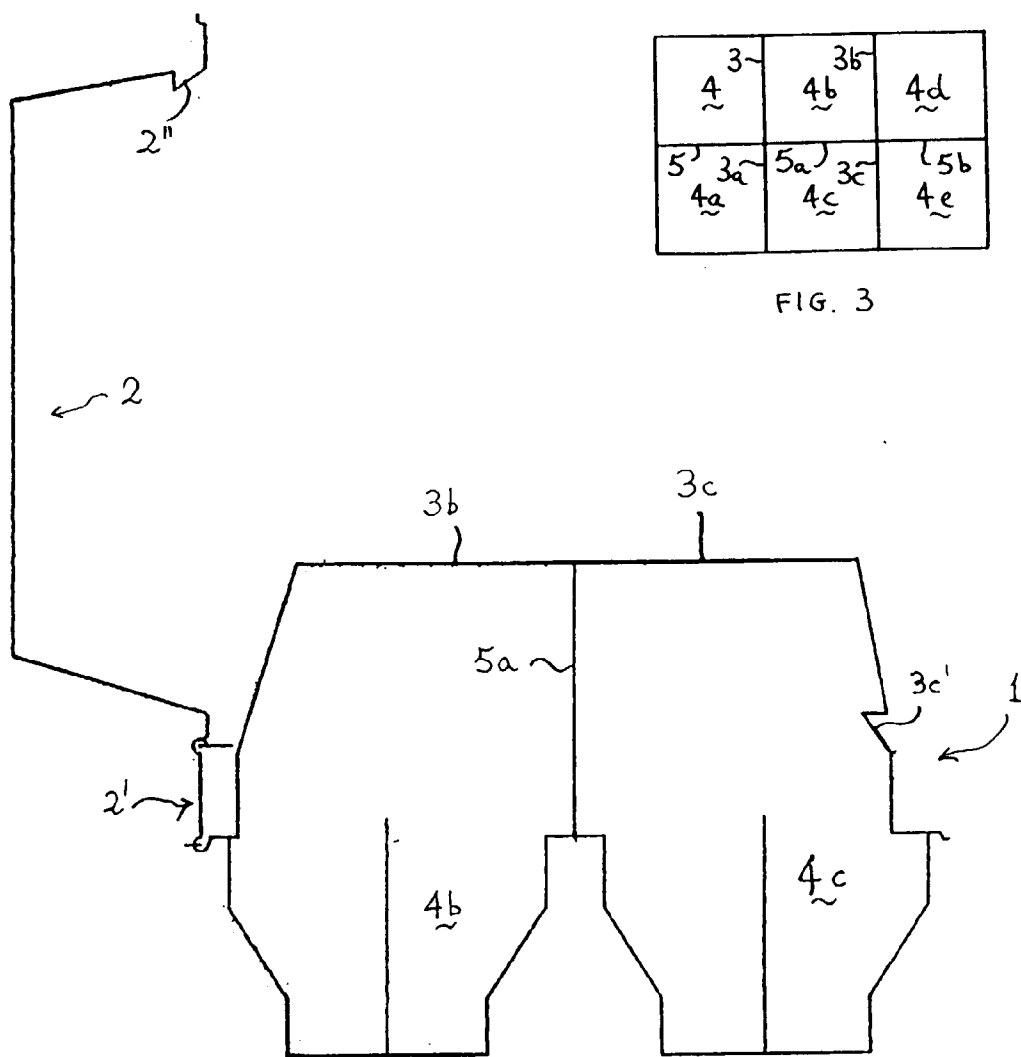


FIG. 1

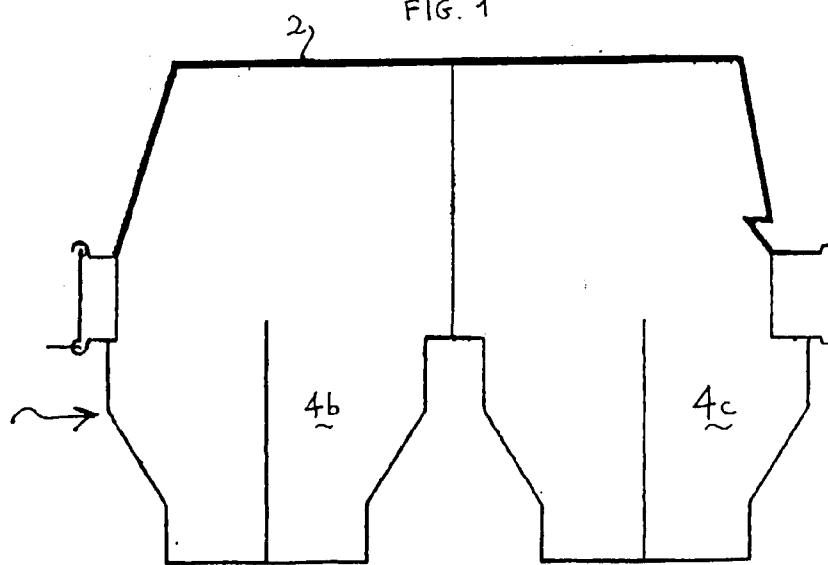


FIG. 2

<u>4</u> ³	<u>4b</u> ^{3b}	<u>4d</u>
<u>5</u> ^{3a} <u>4a</u>	<u>5a</u> ^{3c} <u>4c</u>	<u>5b</u> <u>4e</u>

FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 97 83 0038

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.6)
X	US 1 975 127 A (SHERMAN) * page 1, line 85 - page 2, line 20; figures 1,2 *	1	B65D85/32
X	US 2 759 650 A (RANDALL) * column 2, line 37 - column 3, line 14; figures 1,4 *	1,3	
X	US 2 158 072 A (BARTLETT) * figure 3 *	1,2	
A	CA 1 237 396 A (EMERY) * page 4, last paragraph - page 6, paragraph 1; figure 3 *	3	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int.Cl.6)
			B65D
Place of search THE HAGUE		Date of completion of the search 1 October 1997	Examiner Bridault, A
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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