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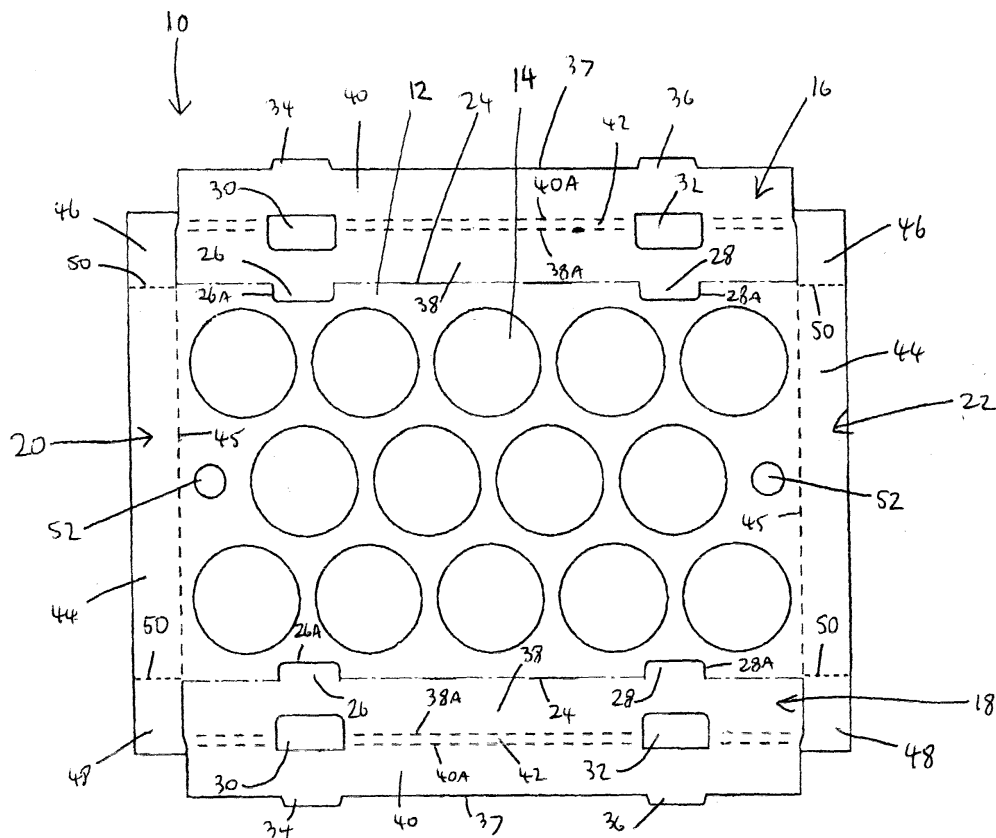
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(54) **Packaging arrangement**

(57) A packaging arrangement comprises a main portion (12) defining a plurality of apertures (14) for receiving an article in each aperture. The arrangement also includes support means (16, 18) extending down-

wardly from the main portion (12). The support means (16, 18) comprises means (50) to enable the support means (16, 18) to be manipulated to allow the articles received in the apertures (14) to engage a surface on which the packaging arrangement is disposed.



Description

[0001] This invention relates to packaging arrangements. Particularly, but not exclusively, it relates to packaging arrangements to facilitate the handling of articles, for example pastry articles.

[0002] The supply and shipping of pastry articles, for example egg custards, involves many stages, at each of which there is the potential for loss of the product.

[0003] The present methods of transporting such pastry articles is to arrange a plurality of the articles in a polystyrene tray which is then arranged in an outer casing and then transported to a bakery. At this stage, the pastry articles contain no filling. At the bakery, the cases are unloaded and the trays removed. Each pastry case is then removed from the tray.

[0004] The empty pastry cases are then filled with liquid egg custard and each individual filled pastry case is then arranged in the oven for cooking. The disadvantage of such a system is that a substantial amount of the liquid egg custard is wasted due to spillage when it is poured into the empty pastry cases.

[0005] According to one aspect of this invention there is provided a packaging arrangement comprising a main portion defining a plurality of apertures for receiving an article in each aperture, and support means extending downwardly from the main portion, wherein the support means comprises means to enable the support means to be manipulated to allow the articles received in the apertures to engage a surface on which the packaging arrangement is disposed.

[0006] Preferably, the manipulation means allows the support means to be re-arranged, preferably by folding, to a position in which they do not support the main portion. The support means are preferably re-arranged by moving the support means to the non-supporting position.

[0007] The manipulation means may comprise means to enable the support means to be broken, preferably by tearing, or to be deformed.

[0008] Preferably, the support means is foldable relative to the main portion. The support means may comprise first and second opposite main support members, and each main support member may be provided with upstanding tabs to be received in corresponding apertures in a further packaging arrangement whereby the further packaging arrangement can be disposed on the first mentioned packaging arrangement. The support means may also include first and second subsidiary support members. The subsidiary support members may comprise foldable portions foldably attached to the main portion, and each subsidiary support members may include locking portions to lock the main support members in a support position. Preferably the locking portions extend from the foldable portion to be received by the main support members. The subsidiary support means may include said manipulation means which may be provided between said locking portion and the

said foldable portion of said subsidiary support members.

[0009] The arrangement may comprise holding means to enable it to be arranged on or lifted from a support surface. The holding means may comprise apertures to receive a finger of a person handling the arrangement.

[0010] The packaging arrangement is preferably in the form of a tray and may be formed from a blank having foldable sections to form said support means.

[0011] According to another aspect of this invention, there is provided a method for handling a plurality of articles comprising disposing said articles on a packaging arrangement in a plurality of apertures defined in said arrangement, moving said arrangement to a station for treating said articles, disposing said arrangement in means for treating said articles, and thereafter removing said arrangement from said treating means.

[0012] The packaging arrangement may comprise a packaging arrangement as described in any of paragraphs five to ten above.

[0013] Preferably, the treating means comprises cooking means.

[0014] Advantageously, the packaging arrangement comprises the features of the packaging arrangement described above. Preferably, the step of disposing the arrangement in the treating means comprises manipulating said support means to allow the articles on the arrangement to engage a support surface in said treating means. Preferably, the step of manipulating the support means comprises moving, preferably by folding, the support means to a position in which they do not support the main portion.

[0015] Preferably, the manipulation of the support members involves breaking or deforming at least some of the support members to enable said support members to be folded to the non-supporting position. The step of breaking the support means may comprise tearing the support means, preferably along at least one tear line.

[0016] The articles disposed on the packaging arrangement may be in the form of pastry articles.

[0017] An embodiment of the invention will now be described by way of example only, with reference to the accompanying drawing which is a plan view of a blank for a packaging arrangement.

[0018] Referring to Fig. 1, there is shown a blank 10 for use in forming a tray for carrying a plurality of pastry articles. The blank 10 comprises a main portion 12 defining a plurality of apertures 14. In the embodiment shown, there are fourteen of said apertures 14. Each of the apertures 14 is intended to receive a pastry case, held in a foil cup. The case may be filled with a suitable food material, for example egg custard.

[0019] Extending from the main portion 12 is support means in the form of first and second opposite main support members 16, 18 and first and second opposite subsidiary support members 20, 22. The main support mem-

bers 16,18 are respectively attached to the main portion by fold lines 24. Tabs 26,28 extend inwardly into the main portion 12, and are defined by cut lines 26A,26B. The purpose of the tabs 26,28 will be explained below.

[0020] Also defined in the wall members 16,18 are generally rectangular apertures 30,32 which are arranged in line with the respective tabs 26,28. Again, the apertures 30,32 are provided to locate upwardly extending tabs 26,28 of a tray underneath as will be explained below. Further tabs 34,36 extend outwardly from the free edge 37 of each main support member 16,18. The further tabs 34,36 are in line with the apertures 30,32 and with the first mentioned tabs 26,28.

[0021] Each of the main support members 16,18 comprises a first section 38 extending from the fold line 24, a second section 40 which has the free edge 37, and a central section 42 arranged between the first and second sections 38,40. The central section 42 is connected to the first and second sections 38,40 by respective fold lines 38A,40A.

[0022] The support members 16,18 can be folded to form support walls extending downwardly from the main portion 12. One way to do this is as follows. The support members 16,18 are folded about the fold line 24 such that they extend downwardly from the main portion 12. The central section 42 is then folded inwardly about the fold line 38A to extend generally parallel to the main portion 12. The second section 40 is then folded upwardly about the fold line 40A to extend up to the main portion 12 inwardly of, and generally parallel to, the first section 38.

[0023] When the support members 16,18 are folded downwardly, each tab 26,28 is automatically moved to an upwardly extending position and defines between the respective tab 26,28 and the main portion 12 a hole to receive a respective one of the tabs 34,36 when the second section 40 is folded upwardly.

[0024] The subsidiary support members 20,22 each comprise an elongate foldable portion 44, attached by a fold line 45 to the main portion 12, and first and second locking portions 46,48 extending from the ends of the foldable portion 44. The locking portions 46,48 are connected to the foldable portion 44 by perforated fold lines 50.

[0025] When the support members 16,18 have been so folded as described above, the subsidiary support members 20,22 are then folded to form further support walls. The foldable portions 44 are folded downwardly about the fold lines 45, and the locking portions 46,48 are folded inwardly about the perforated fold lines 50 to be received between the downwardly extending first section 38 and the upwardly extending second section 40 of each support wall defined by the support members 16,18.

[0026] The perforated fold lines 50 are so perforated to enable the subsidiary support members to be torn along these lines 50 such that the four support members 16,18,20,22 can be moved to a non-supporting position.

The purpose of this will be explained below.

[0027] The main section 12 also defines smaller apertures 52 which are in the form of finger holes to enable the trays to be carried, particularly when being removed from the oven when the tray or the articles may be hot.

[0028] The use of the tray will now be described.

[0029] After the tray has been formed by folding the support members 16,18,20,22 as described above to form the support walls, each of the apertures 14 then receives into it a respective pastry article (not shown), for example an egg custard pastry case in a foil cup, each pastry case being provided with frozen egg custard. The loaded tray is then arranged in an outer casing (not shown). The outer casing can hold ten of the trays in five layers of two trays side-by-side. The arrangement of one tray on top of another involves locating the upwardly extending tabs 26,28 into the apertures 30,32 defined in the folded support members 16,18.

[0030] The filled tray is then transported, for example by road or rail to a bakery where the cases are unloaded from the transporter.

[0031] Each tray is then removed from the casing and arranged in an oven for baking. On arranging the tray in the oven, the subsidiary support members 20,22 are torn by tearing them along the perforated lines 50. The support members can then be folded upwardly such that the tin foil holding the pastry cases engages the support surface, or sole plate, inside the oven to ensure that complete baking occurs.

[0032] The lifting of the trays out of the casing is facilitated by the use of the finger holes 52 into which the person moving the trays can insert his fingers to carry the trays. After baking, the trays are removed from the oven again by the person inserting his fingers into the finger holes 52, and carrying the tray. The cooked pastry articles are then removed from the trays and displayed for sale.

[0033] Various modifications can be made without departing from the scope of the invention, for example the number of apertures in the main section could be varied in number and in size, as desired.

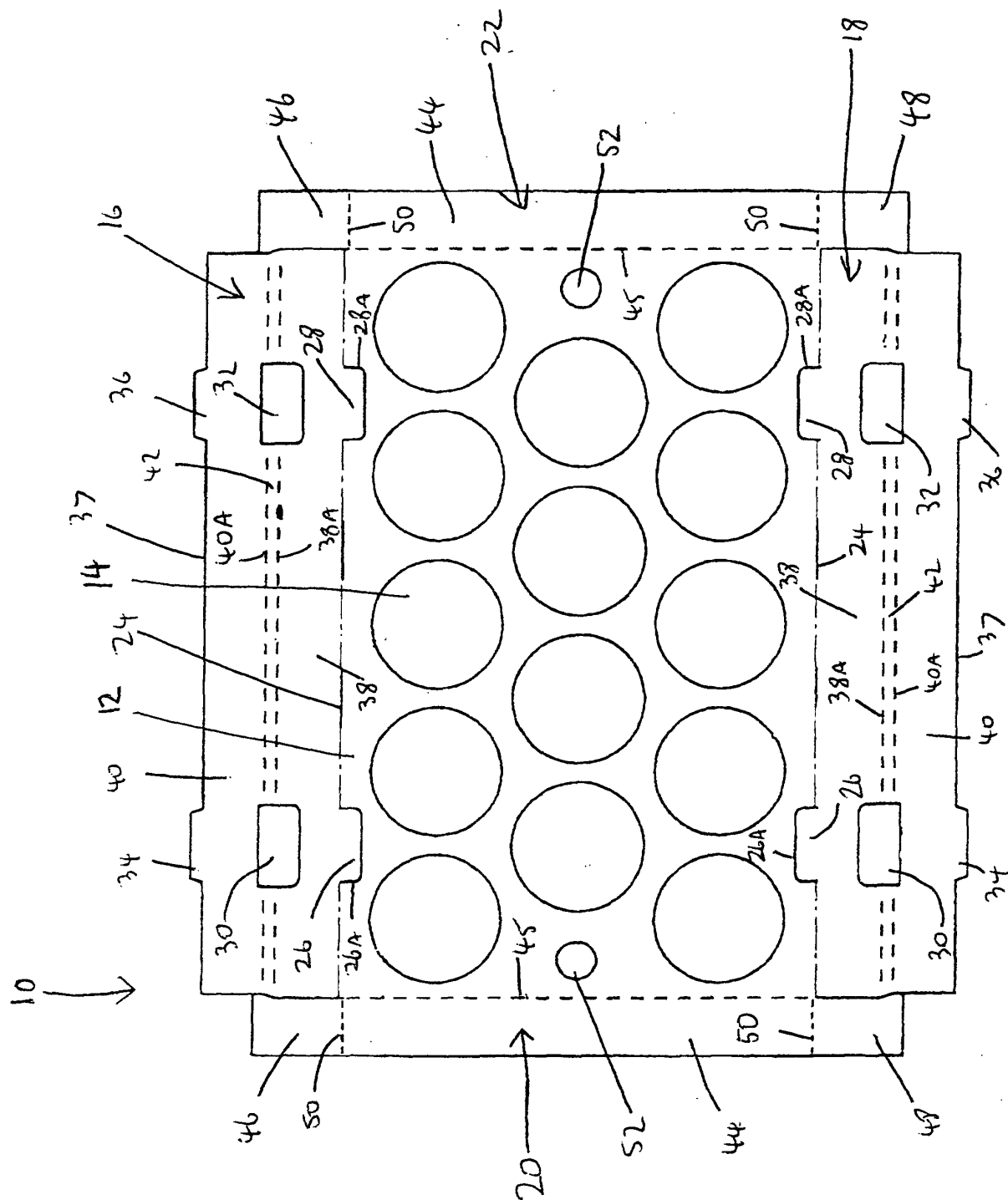
[0034] Whilst endeavouring in the foregoing specification to draw attention to those features of the invention believed to be of particular importance it should be understood that the Applicant claims protection in respect of any patentable feature or combination of features hereinbefore referred to and/or shown in the drawings whether or not particular emphasis has been placed thereon.

Claims

1. A packaging arrangement comprising a main portion defining a plurality of apertures for receiving an article in each aperture, and support means extending downwardly from the main portion, wherein the support means comprises means to enable the sup-

port means to be manipulated to allow the articles received in the apertures to engage a surface on which the packaging arrangement is disposed.

2. A packaging arrangement according to Claim 1 wherein the manipulating means comprises means to enable the support means to be broken or deformed to allow the support means to be moved to a position in which they do not support the main portion. 5
3. A packaging arrangement according to Claim 1 or 2 wherein the support means is foldable relative to the main portion, and comprises first and second opposite main support members. 10
4. A packaging arrangement according to Claim 3 wherein each main support member is provided with upstanding members to be received in corresponding apertures in a further packaging arrangement whereby the further packaging arrangement can be disposed on the first mentioned packaging arrangement. 15
5. A packaging arrangement according to Claims 3 or 4 wherein the support means also includes first and second subsidiary support members, each subsidiary support member comprising a foldable portion foldably attached to the main portion, and a locking portion attached to the main portion to lock the support members in a support position. 20
6. A packaging arrangement according to Claim 5 wherein the subsidiary support members include said manipulation means provided between said locking portion and the said foldable portion of said subsidiary support members. 25
7. A packaging arrangement according to Claim 6 wherein the manipulation means comprises a tear line along which the subsidiary support members can be torn to separate the locking portion from the foldable portion. 30
8. A packaging arrangement according to Claim 7 wherein the tear line is defined by a plurality of perforations arranged in a linear array. 35
9. A packaging arrangement according to any preceding claim wherein the arrangement further includes holding means to enable it to be arranged on or lifted from a support surface. 40
10. A packaging arrangement according to Claim 9 wherein the holding means comprises apertures to receive a finger of a person manipulating the arrangement. 45
11. A packaging arrangement according to any preceding claim wherein the packaging arrangement is preferably in the form of a tray and may be formed from a blank having foldable sections to form said support means. 50
12. A method for handling a plurality of articles comprising disposing said articles on a packaging arrangement in a plurality of apertures defined in said arrangement, moving said arrangement to a station for treating said articles, disposing said arrangement in means for treating said articles, and thereafter removing said arrangement from said treating means. 55
13. A method according to Claim 12 wherein the treating means comprises cooking means.
14. A method according to Claims 12 or 13 wherein the packaging arrangement is as claimed in any of Claims 1 to 11.
15. A method according to Claim 14 wherein the step of disposing the arrangement in the treating means comprises manipulating said support members to allow the articles on the arrangement to engage a support surface in said treating means.
16. A method according to Claim 15 wherein the manipulation of the support members involves breaking or deforming at least some of the support members to enable said support members to be folded to a position in which they do not support the main portion.
17. A method according to Claim 16 wherein the or each support means is broken by tearing along perforated lines.
18. A packaging arrangement substantially as herein described with reference to the accompanying drawings.
19. A method according to claim 12 substantially as herein described.
20. Any novel subject matter or combination including novel subject matter disclosed herein, whether or not within the scope of or relating to the same invention as any of the preceding claims.





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 01 30 1128

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.7)
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Y	* column 2, line 62 - line 65; figure 1 *	4	B65D5/22
A	---	7,15	
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			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
			B65D A21B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 4 July 2001	Examiner Sundell, O
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 01 30 1128

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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