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(71) Applicant:
The Premium Ice Cream Company Limited
Cardiff CF3 8ED (GB)

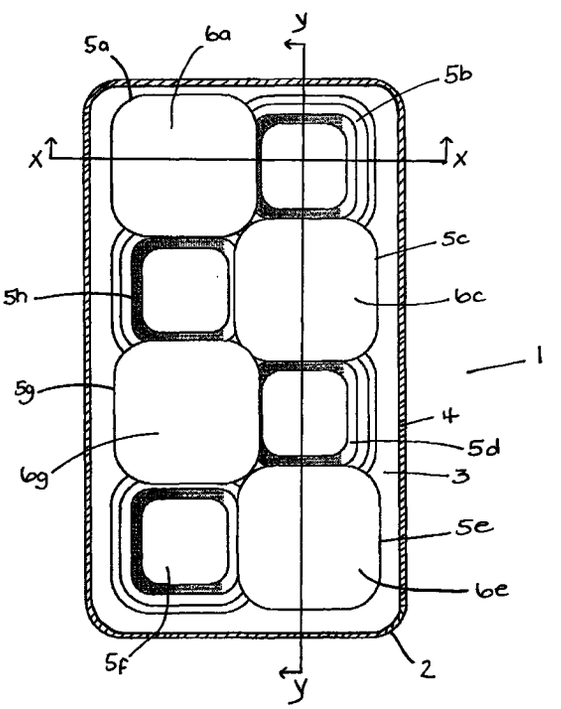
(72) Inventor: **Thayer, Edward John**
Thornhill, CF4 9DN, Cardiff (GB)

(74) Representative:
Austin, Hedley William
Urquhart-Dykes & Lord
Alexandra House
1 Alexandra Road
Swansea Wales SA1 5ED (GB)

(54) Multipack

(57) A multipack (1) for storing chilled or frozen food or the like. The multipack includes a plurality of tubs (5) each tapering from a closed end to an openable end of greater cross-sectional area than the closed end. The tubs (5) are arranged within an outer box (2) side by side in an alternate upright and inverted configuration.

FIGURE 1



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Description

[0001] The present invention is concerned with multipacks for storing frozen or chilled desserts or the like.

[0002] In today's society, consumers desire food products which are packaged in "easy to store" containers which advantageously contain a variety of food products therein. Such large packs containing small individual portion-sized packs, are commonly known as "multipacks". Multipacked products may include similar products varying only in, for example, flavour or colour, or alternatively, identical products which are simply packaged in individual portions for convenience.

[0003] Multipacks have been commercially available for many years for products such as crisps, biscuits, chocolate and the like; however, such multipacks are typically standard or individual portion-sized bags contained within a larger bag. Such multipacks are cumbersome and difficult to store.

[0004] A further type of multipack which is currently available is for chilled desserts such as yogurts and/or mousses or the like. Such multipacks comprise individual portion-sized containers being joined along the upper peripheral edge of the containers. Such multipacks are disadvantageous as they do not utilise the space available effectively. In addition, such arrangements do not provide sufficient insulation, so that when the multipack is in a warm environment, the food product therein may become too warm, thus increasing the risk of bacteria growth in the chilled products and/or the risk of frozen food products melting.

[0005] Insulated storage devices known in the art typically comprise containers having walled cavities filled with foam, gel or the like, or alternatively, utilize packs or bags which contain gel or the like which have been previously frozen or chilled.

[0006] It is therefore an aim of the present invention to provide a multipack suitable for both chilled and frozen food products, which provides good utilisation of space and provides protection against thermal shock.

[0007] According to the present invention therefore, there is provided a multipack for storing chilled or frozen food, which multipack includes a plurality of tubs, each of which tapers from a closed end to an openable end of greater cross-sectional area than the closed end, each openable end having a peripheral rim to which is sealed a sheet-like cover member. The tubs are arranged side by side and alternately in respective upright and inverted configurations, the plurality of tubs being contained within a box comprising a base having peripheral upstanding walls extending therefrom and a lid secured to the walls substantially parallel to the base such that the closed and openable ends of the tubs are contiguous either to the base or to said lid.

[0008] The tubs may be pyramidal or conical; a substantially square based pyramid is preferred.

[0009] Advantageously, the tubs are truncated such that the closed end is a substantially flat portion, which can act as a base/stand for the respective tub.

[0010] The arrangement of the tubs, such that each adjacent tub is inverted relative to its neighbouring tub, provides good utilisation of space, facilitating optimisation of the number of tubs that can be arranged within the box. It is, however, advantageous to allow a small space between each of the adjacent tubs to allow the circulation of air; thus, the circulation of air provides an insulation layer.

[0011] Although it is envisaged that the tubs may be different, it is preferred that each tub is of substantially the same size and shape; the tubs may then be nestable, which is advantageous when storing the tubs prior to use.

[0012] It is preferred that the tubs are arranged in the box in at least one row. Preferably, the box contains more than one (typically two or three) rows of tubs, each row preferably having more than one (typically three or four) columns.

[0013] The tubs may be formed from plastics material (such as polyethylene or polypropylene) or cardboard; plastics materials are preferred. It is particularly preferred that each of the tubs is formed by a thermoforming process. Each of the cover members are typically plastics, metal foil or cardboard, although it is preferred that each cover member is made from cardboard; preferably each cover member further includes a lift up tab portion.

[0014] The box is typically made from plastics material or cardboard. Typically, such a box includes a base and four upstanding walls therefrom. It is particularly preferred that the box is of cardboard; further preferably the inside of the box being lined with heat sealable plastics such as polyethylene.

[0015] Desirably, the box is provided with a sealable lid. The lid may, for example, be of rigid plastics, plastics film or cardboard. It is desirable that when the lid is attached to the box it forms a tamper-proof seal.

[0016] It is envisaged that the four upstanding walls are folded out to form a rim which has a heat sealable plastics lining facing upwards. A plastics film lid may then be advantageously heat sealed to the heat sealable lining.

[0017] The addition of the lid creates a sealed region of air within the interior of the box, which generally surrounds each tub; the air therefore acts as additional insulation, which reduces the risk of damage from thermal shock.

[0018] According to a first embodiment of the invention, the lid comprises plastics film which is attached to the upstanding walls of the box by adhesive or the like. It is envisaged that in this embodiment, the apparatus may further include a sleeve (typically of cardboard) which is arranged to encompass the box. In use, the plastics film (which provides a tamper-proof lid) is removed upon first opening the box, and then discarded. The sleeve can then be slid over the box, which is advantageous during storage.

[0019] According to the second embodiment of the invention, the lid is formed from rigid plastics and is in the form of a "snap-on" type lid which is removably engageable with the box. Typically, the lid further includes a tamper seal arranged on the outer surface of the upstanding walls, the seal being attached to the plastics lid. The seal may advantageously include a "rip-cord" or tear strip, which facilitates easier breaking of the seal at the desired time.

[0020] However, it is also envisaged that the multipack may include a plastics film according to the first embodiment and a snap-on type lid according to the second embodiment.

[0021] According to a second aspect of the present invention there is provided a method of producing a multipack for chilled or frozen food which method includes:

(a) placing food to be stored in a plurality of tubs each tapering from a closed end to an open end of greater cross-sectional area than the closed end, the open end having a peripheral rim;
(b) sealing a respective sheet-like cover member to the peripheral rim of each of the tubs;
(c) providing a box comprising a base having peripheral upstanding walls extending therefrom;
(d) arranging a plurality of the tubs from step (b) in the box in side by side arrangement and alternately in respectively upright and inverted configurations; and
(e) securing a lid to the walls substantially parallel to the base such that each of the closed ends and the cover members on the open ends are contiguous either to the base or to the lid.

[0022] The box and its contents are then preferably stored under chilled or frozen conditions (typically at a temperature in the range -20°C to +10°C).

[0023] The box may be a pre-formed body (such as an open-topped box substantially as described above). Alternatively, it may be a box formed in situ on a production line.

[0024] The present invention may be more clearly understood from the following description, given by way of example only, with reference to the accompanying drawings, wherein:

Figure 1 is a plan view of a multipack according to the present invention;
Figure 2 is a cross-section along the line X-X; and
Figure 3 is a cross-section along the line Y-Y.

[0025] Referring to the drawings, in which like numerals are used to represent like parts, a multipack is generally indicated by the numeral 1. The multipack 1 comprises an outer box 2 made from cardboard and having a polyethylene lining on the interior; the box 2 has a plastics film 3 which is heat sealed to rim 4 of box 2. The box further has a "snap-on" rigid plastic lid (not shown) which can be removably engaged. Inside box 2, there are eight truncated square-based pyramidal tubs 5a,5b,5c,5d,5e,5f,5g and 5h arranged in two rows. The tubs are arranged such that each upright tub is adjacent to an inverted tub. For example, with reference to the drawings, tub 5c is in an upright position, and adjacent tubs 5b,5d and 5h are therefore inverted.

[0026] Each individual tub 5a,5b,5c,5d,5e,5f,5g and 5h has a respective cover 6a,6b,6c,6d,6e (6f,6g and 6h are not shown), which are made from cardboard.

[0027] In use, frozen dessert or the like is placed into the tubs 5 and cardboard covers 6 are placed on top of the frozen dessert. The tubs 5 are arranged so that covers 6 alternate between facing up and facing down. The film 3 is then heat sealed to box 2. The resultant cavities between each tub contains air; the air acts as an additional insulation layer to prevent a product from "heat shock". A snap-on lid (not shown) is then attached to the upstanding walls of the box 2.

[0028] The entire box 2 and its contents are then stored in a refrigerated container at a temperature of about -20°C.

[0029] When it is desired to eat one of the frozen desserts, the snap-on lid is removed and plastics film 3 peeled off. The desired number of tubs is removed from box 2 (the frozen dessert in each tub being accessed by removal of a respective cover 6). The snap-on lid can then be re-attached to box 2, and the box returned to the refrigerated storage.

Claims

1. A multipack (1) for storing chilled or frozen food, which multipack (1) includes a plurality of tubs (5), each of which tapers from a closed end to an openable end of greater cross-sectional area than the closed end, each openable end having a peripheral rim to which is sealed a sheet-like cover member (6); said tubs (5) being arranged side by side and alternately in respective upright and inverted configurations, said plurality of tubs (5)being contained within a box (2) comprising a base having peripheral upstanding walls extending therefrom and a lid (3) secured to said walls substantially parallel to said base such that said closed and openable ends of said tubs (5) are contiguous either to said base or to said lid.

2. A multipack according to claim 1, wherein said tubs are pyramidal or conical, or truncated such that said closed end is a substantially flat portion (each of said tubs being preferably of substantially the same size and shape).

3. A multipack according to claim 1 or 2, wherein said box contains more than one row of said tubs and/or wherein each of said rows has more than one column.

4. A multipack according to any of claims 1 to 3, wherein said tubs are formed from plastics material (typically by thermoforming) or from cardboard, and/or wherein each of said cover members is of plastics material, metal foil or cardboard (optionally including a lift-up tab portion).

5. A multipack according to any of claims 1 to 4, wherein said box is made from plastics material or cardboard, or of cardboard having a plastics internal lining.

6. A multipack according to any of claims 1 to 5, wherein said box has a lid, which may comprise plastics film which is attached to said upstanding walls of said box by adhesive means, or rigid plastics.

7. A multipack according to claim 6, wherein said lid of rigid plastics further includes a tamper seal arranged on an outer surface of said upstanding walls, said seal being attached to said lid and optionally including a rip-cord or tear strip.

8. A multipack according to any of claims 1 to 7, which further includes a sleeve which is arranged to encompass said box, and/or a lid formed from rigid plastics, said lid being a "snap-on" type lid which is removably engageable with said box.

9. A method of producing a multipack (1) for chilled or frozen food which method includes:

(a) placing said food to be stored in a plurality of tubs (5) each tapering from a closed end to an open end of greater cross-sectional area than said closed end, said open end having a peripheral rim;
(b) sealing a respective sheet-like cover member (6) to the peripheral rim of each of said tubs;
(c) providing a box (2) comprising a base having peripheral upstanding walls extending therefrom;
(d) arranging a plurality of said tubs(5) from step (b) in said box (2) in side by side arrangement and alternately in respectively upright and inverted configurations; and
(e) securing a lid (3) to said walls substantially parallel to said base such that each of said closed ends and said cover members (6) on said open ends is contiguous either to said base or to said lid.

10. A method according to claim 9, which further includes storing said box and its contents at a temperature in the range -20°C to +10°C, after step (d).

FIGURE 1

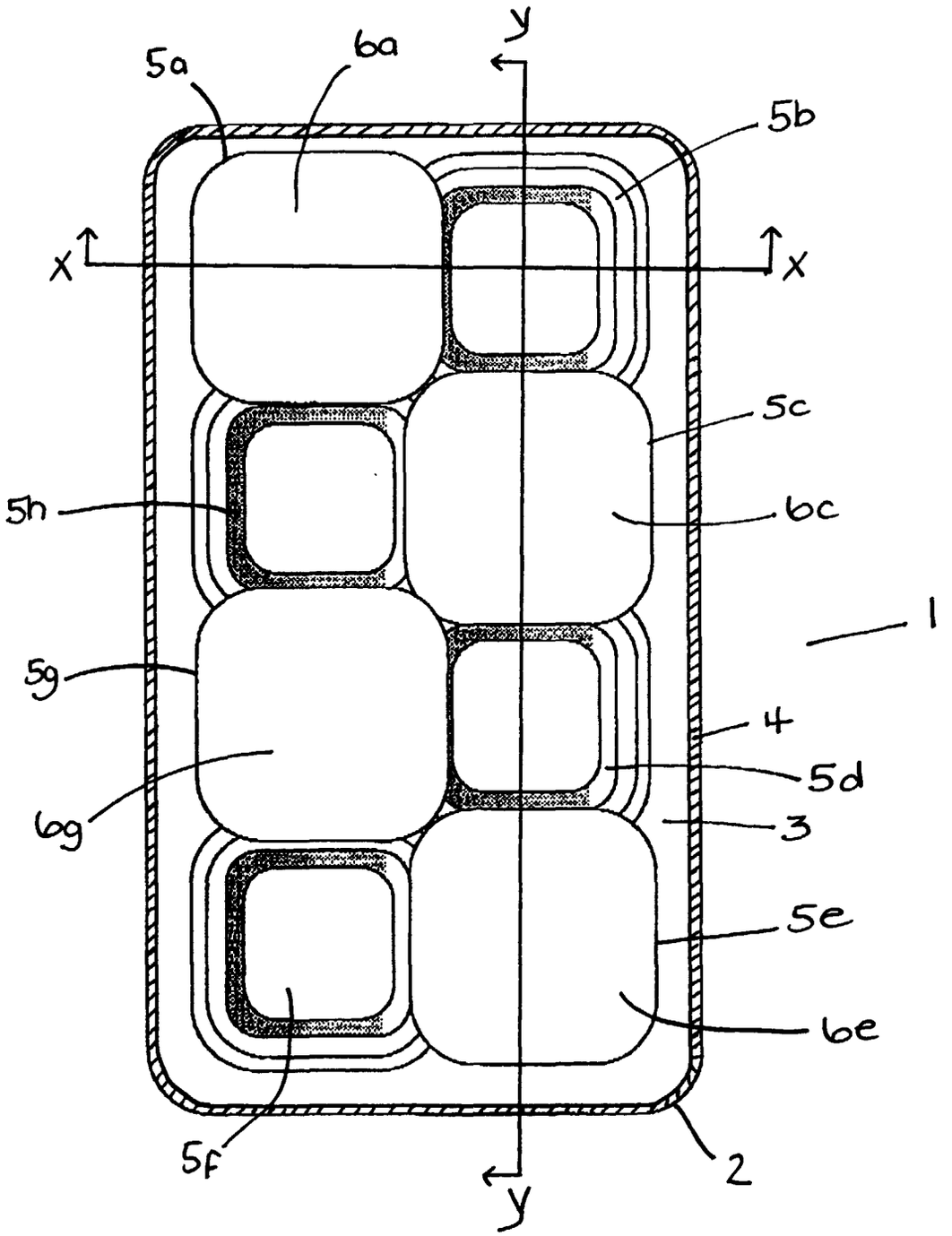

FIGURE 2

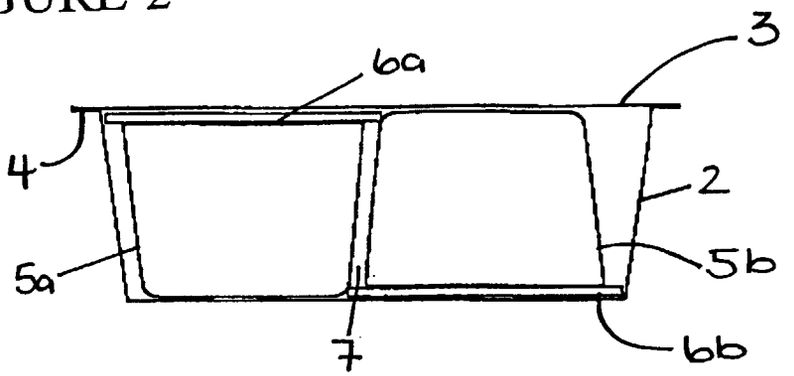

FIGURE 3