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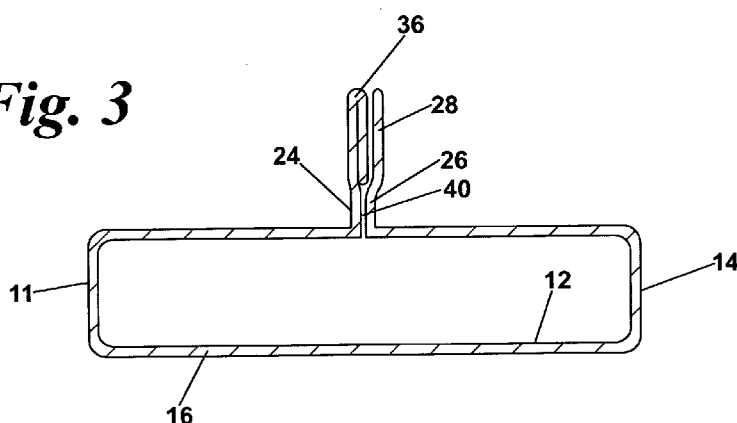
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(54) Title: PACKAGING AND METHOD FOR PACKAGING

Fig. 3



(57) Abstract: A package (11) for a generally block-shaped food product comprises a sheet (10) of foldable material. The sheet has an inner portion (16) for enclosing the product and a frame-shaped sealing portion (18) surrounding the inner portion for sealing the package. Two side portions (24, 26) of the sealing portion abut one another to form a longitudinal seal and opposing end portions (20, 22) of the sealing portion abut each other to form seals along respective ends. A flap (28) is provided along one side of the sheet adjacent an outer edge of the respective side portion, and an outer edge region (32) of the other side of the sheet is folded inwardly to form a tab (36), the inner and outer surfaces of the flap portion and the tab are accessible.

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Packaging and Method for Packaging

Technical Field of the Invention

The present invention relates to packaging, and in particular to improved
5 packaging for packaging generally block-shaped food products. The present invention
is also directed to a method of packaging such food products.

Background to the Invention

It is known to package generally block-shaped food products, such as
10 chocolate bars and other snack type confectionery products, in a wrapper that is
fabricated from a material that is substantially gas and moisture impervious, in order
to maintain the freshness of the product.

Such known wrappers comprise a sheet of flat, foldable material. The sheet is
often rectangular and has an inner surface directed to the food product and an outer
15 surface. The outer surface may be printed on or otherwise be provided with
information for the consumer. An adhesive or a pressure sealable and re-sealable
coating is applied to the inner surface of the sheet. The sheet is folded about the
product so that an inner portion encloses the top, bottom, side and end surfaces of the
product. The sheet is sufficiently long that it extends beyond the front and rear
20 surfaces of the product and opposing inner surfaces of the sheet are brought into
contact to form seals along the front and rear edges of the package. The inner surfaces
of side portions of the sheet are also brought into contact to form a fin seal along the
length of the package.

The known package forms a fully sealed package for the product, which is
25 substantially gas and moisture impervious. However, because the material from which
the sheet is made is quite tough, the known package can be difficult to open.

To address this problem, it has been proposed in GB 1, 107, 200 A to provided
tabs along each of the sides of the sheet by folding the side edges of the sheet inwardly
and sealing them in position. When the package is formed, the tabs project from an

outer edge of the longitudinal fin seal. The inner and outer surfaces of the tabs are accessible by a consumer, who can grasp the tabs and pull them apart to open the package by peeling apart the longitudinal fin seal. However, it has been found that the tabs, which are of double thickness when compared to the remainder of the sheet, tend to jam when used in conventional packaging machinery.

An alternative proposal to the problem of opening the known packaging has been proposed in EP 1 288 139 A1. In this arrangement, the adhesive or pressure sealable and re-sealable coating is only applied to the inner surface in a frame-shape sealing portion surrounding the inner portion. The frame-shaped sealing portion has opposing end portions and opposing side portions. The sheet is also provided with a flap adjacent each of the side portions. In the finished packaging, the flaps project from an outer edge of the longitudinal fin seal. Both the inner and outer surfaces of the flaps are accessible such that they can be grasped by a consumer and pulled apart to open the package in a similar manner to the tabs. Because the flaps are the same thickness as the remainder of the sheet, this arrangement does not tend to jam in conventional packaging machinery. However, the flaps have been found to be not entirely satisfactory to consumers as a means of opening of the packaging.

It is an object of the invention to provide an improved packaging for a generally block-shaped product which overcomes or at least mitigates the above problems.

It is a particular object of the invention to provide a package for a generally block-shaped product which is conveniently opened and which can be applied to the product using conventional packaging machinery.

It is a further object of the invention to provide a method of packaging a generally block-shaped food product.

Summary of the Invention

In accordance with a first aspect of the invention, there is provided a package for packaging a generally block-shaped food product, the package comprising a sheet of foldable packing material having an inner surface and an outer surface, the sheet

having an inner portion for enclosing the top, bottom, side, and end surfaces of the product, a frame-shaped sealing portion enclosing the inner portion for sealing the package and comprising opposing end portions and opposing side portions, the sheet being folded around the product such that the inner portion encloses the block-shaped product with the inner surface of the sheet directed towards the product, the inner surfaces of the two side portions of the frame-shaped sealing portion abutting one another to form a longitudinal seal, and opposing inner surface regions of the end portions of the frame-shaped sealing portions abutting each other to form seals along respective ends, in which, a flap portion is provided along one side of the sheet adjacent an outer edge of the respective side portion of the frame-shaped sealing portion, and an outer edge region of the other side of the sheet is folded inwardly to form a tab, the inner and outer surfaces of the flap portion and the tab being accessible.

The provision of a tab along one side edge of the packaging in combination with a flap along the other side edge has been found to provide a particularly convenient means for opening the package. Rather surprisingly, it has also been found that having a tab along one side of the sheet only does not result the sheet becoming jammed when used with conventional packaging machinery to form the package.

The outer edge region of the other side of the sheet may be sealed to an opposing region of the sheet, inner face to inner face, to hold the tab in position.

The seals may be formed by means of a sealing composition applied to the inner surface of the sheet within the sealing portion.

The sealing composition may also be applied to the inner surface of the outer edge region of the other side of the sheet. In which case, the sealing composition may be applied to the inner surface of the sheet on the other side, from the respective side portion substantially up to the side edge of the sheet.

In one embodiment, no sealing composition is applied to the inner surface of the flap.

The tab may be positioned adjacent an outer edge of the longitudinal seal or it may be spaced from the outer edge of the longitudinal seal by a flap region.

In one embodiment no sealing composition is applied to the inner surface of the inner portion.

In an alternative embodiment, at least some of the seals are formed by welding.

In accordance with a second aspect of the invention, there is provided a method
5 of packing a generally block-shaped food product by means of a package in accordance with the first aspect, the method comprising:

- a. positioning the food product on the inner surface of the sheet in the inner portion;
- b. folding the sheet around the product so that the product is enclosed by
10 the inner portion of the sheet and the inner surfaces of the side portions of the seal portion are brought into abutment;
- c. forming the longitudinal seal along the abutting area;
- d. bringing opposing inner surfaces of the end portions of the sealing portion into abutment;
- 15 e. forming end seals in the abutting areas.

The method may comprise folding the longitudinal seal, the tab and flap around a fold line at the border of the inner portion and one of the side portions.

Detailed Description of the Invention

20 An embodiment of the invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a schematic plan view of the inner surface of a sheet for forming a package in accordance with the invention;

Figure 2 shows the sheet of Figure 1, which one side edge folded over to form
25 a tab;

Figure 3 is a schematic lateral cross section view through a package in accordance with the invention, shown on an enlarged scale;

Figure 4 is a schematic perspective view of a finished package in accordance with the invention;

Figures 5 and 6 are views similar to those of Figures 1 and 2 but showing an alternative embodiment of a sheet for forming a package in accordance with the invention.

Figure 1 shows schematically a flat sheet 10 of foldable material for forming a package 11 in accordance with the invention. The sheet can be made of any foldable material suitable for packaging food products. Preferably, the material is substantially moisture and gas impervious. For example, the sheet may be made of a paper based material, flexible films, one or more polymers, or a metallic foil. The sheet may also be a laminated sheet comprising layers of different materials, including any those mentioned above in any suitable combination. In one embodiment, the sheet comprises an orientated polypropylene (OPP) laminate. The sheet may be made from any of the materials discussed in the prior art patent applications discussed above, details of which are hereby incorporated by reference.

The sheet 10 has an inner surface 12 (shown in Figures 1 and 2) and an outer surface 14. The sheet has an inner portion 16 for enclosing the top, bottom, side, and end surfaces of a block-shaped food product. The food product may be a confectionery product and in particular a snack type confectionery product such as a chocolate bar.

Surrounding the inner portion 16 is a frame-shaped sealing portion 18 (indicated with cross hatching in Figures 1 and 2). The frame-shaped sealing portion is coated on the inner surface of the sheet with a sealing composition that enables a seal to be formed when opposing inner surface regions of the sealing portion 18 are contacted together during fabrication of the package. The composition may be a pressure sensitive coating which forms a seal upon the application of moderate pressure without the need to apply additional heat. The coating may be a sealable and re-sealable wax-like composition. Such a composition can be peeled apart to open the packaging but will re-seal if the surfaces are brought back into contact to re-close the package. The seal formed when the package is re-closed need not be as strong as the initial seal but will be sufficient to prevent the opposing surfaces from falling apart without the application of at least a minimal force to separate them. The sealing

composition could, for example, be a pressure sensitive cold-seal adhesive or a self-adhesive thermoplastic material.

Alternatively, the sealing composition may be a temperature sensitive adhesive. The sealing composition may be any of those disclosed in the prior art
5 patent applications discussed above, details of which are also hereby incorporated by reference.

In a further alternative embodiment, the longitudinal and/or the end seals may be welded without a sealing composition. Welding can be carried by any suitable means and may involve heating the material in the sealing portion under pressure so
10 that the opposing surfaces melt and fuse together to form a welded seam. For example, the end seals may be welded seals and the longitudinal seal may be formed by means of a peelable and re-sealable composition applied to the material.

The frame-shaped sealing portion has a two opposing end portions 20, 22 and two opposing side portions 24, 26. When being applied to a food product, the sheet
15 will be fed into a packaging machine in the direction of arrow A in Figure 1. With reference to the direction of feed, the end portion 20 can be considered a front end portion and the end portion 22 can be considered a rear end portion. The corresponding ends of the product may also be considered as a front and rear end respectively. For the sake of convenience, the terms "front" and "rear" and "side" are
20 used herein in relation to the direction of feed but should not be regarded as limiting.

The front and rear portions 20, 22 extend from respective front and rear edges of the inner portion 16 to the front and rear edges of the sheet 10 itself. Along one side of the sheet (the left as shown in Figures 1 and 2) the sheet extends beyond the outer edge of the side portion 26 to form a flap 28 on which no sealing composition is
25 applied.

The sheet 10 also extends laterally outwardly from the outer edge (indicated by dashed line 30) of the other side portion 24 by a distance that is greater than the width of the flap 28. On this side of the sheet, the sealing composition is applied to the inner surface right up to the side edge of the sheet itself. An outer edge region 32 of the
30 sheet is folded inwardly about line 34 to form a tab 36, as shown in Figure 2. The

inner surface of the outer edge region 32 is brought into contact with the inner surface of an opposing region of the sheet 10 to form a seal to hold the tab 36 in position. With the tab 36 formed, the sealing composition applied to the inner surface of the side portion 24 of the frame-shaped sealing portion is still exposed between the inner edge 38 of the tab 36 and the inner portion 16. In this embodiment, the tab 36 is wider than the flap 28 but this need not be the case and the flap 28 and tab 36 could be the same width or the flap 28 could be wider than the tab 36.

To form the package 12, the food product is positioned substantially centrally within the inner portion 16 so as to contact the inner surface of the sheet. The sheet 10 is then folded around the food product so that the inner surfaces of the side portions 24, 26 contact one another as shown in Figure 3. A seal 40 is then formed between the two side portions, typically by the application of a moderate pressure. With the sheet folded about the food product, the front and rear portions 20, 22 of the sealing portion over hang the front and rear ends of the product respectively and are folded back over themselves so that opposing regions of the inner surface of the front and rear portions are in contact. Front 42 and rear 44 seals are formed, typically by the application of a moderate pressure to the front and rear sealing portions.

The product is now sealed inside the package 12 by virtue of the front 42, rear 44 and longitudinal 40 seals. As shown in Figure 3, the flap 28 and tab 36 project outwardly beyond the outer edge of the longitudinal seal 40. Because no sealing composition is applied to the flap 28 or the outer surface of the tab 36, the two remain separated so that a consumer can grasp them and pull them apart to open the package.

For neatness, the longitudinal seal 40, the flap 28 and the tab 36 are folded over to one side or the other so as to lie generally parallel to the surface of the product as illustrated in Figure 4. The longitudinal seal, flap and tab may be folded about a fold line at the border of the inner portion and one of the side portions so that either tab 36 or the flap 28 is uppermost.

To further assist a consumer in opening the package, an embossed pattern may be applied to all or part of the tab 36 and/or the flap 28.

The package 12 is formed in a form-fill-seal (FFS) packaging machine and the sheet 10 is preferably provided as part of a continuous roll of sheets (roll-fed) fed into the machine in the direction of arrow A. The material is folded about each product in turn so that opposing longitudinal edge regions of the material are brought into contact and bonded together to form the longitudinal seam, opposing regions of the material at either end of the product are brought into contact and bonded to form the transverse end seams and the material is cut to separate the package from the remainder of the film.

Where a sealing composition is used to form the seals, it may be pre-applied to the sheets or roll or it may be applied during formation of the package. The tab 36 may also be pre-formed before the sheets are wound on to the roll or it may be formed as part of the package formation process. Typically, the tab 36 will be formed before the sheet is folded around the food product but it can be formed at any stage in the packaging process. The tab 36 may be formed by welding the opposing regions of the sheet together.

In an alternative embodiment illustrated in Figures 5 and 6, the sealing composition is not applied continuously from the side portion 26 to the outer edge of the sheet 10. Rather there is gap between the outer edge 30 of the side portion 26 and an area 46 of sealing composition applied to the inner surface of the sheet to form the tab 36. In this case, when the outer edge region 32 of the sheet is folded inwardly to form the tab 36, the inner end 38 of the tab 36 is spaced from the outer edge of the side portion 26. Thus, in the completed package 12, a small flap portion 48 is formed between the outer edge of longitudinal seal 40 and the tab 36.

Various changes and modifications may be made to the above described package without departing from the scope of the present invention as defined in the claims. For example, in the embodiments illustrated, the sheet 10 is rectangular and is suitable for packaging a rectangular block-shaped food product. However, the shape and dimensions of the sheet 10 can be varied to suit the shape and dimensions of the product which could be a square generally block-shaped product, for example.

Claims

1. A package for packaging a generally block-shaped food product, the package comprising a sheet of foldable packing material having an inner surface and an outer surface, the sheet having an inner portion for enclosing the top, bottom,
5 side, and end surfaces of the product, a frame-shaped sealing portion enclosing the inner portion for sealing the package and comprising opposing end portions and opposing side portions, the sheet being folded around the product such that the inner portion encloses the block-shaped product with the inner surface of the sheet directed towards the product, the inner surfaces of the two
10 side portions of the frame-shaped sealing portion abutting one another to form a longitudinal seal, and opposing inner surface regions of the end portions of the frame-shaped sealing portion abutting each other to form seals along respective ends, in which, a flap portion is provided along one side of the sheet adjacent an outer edge of the respective side portion, and an outer edge region
15 of the other side of the sheet is folded inwardly to form a tab, the inner and outer surfaces of the flap portion and the tab being accessible.
2. A package as claimed in claim 1, in which the outer edge region of the other side of the sheet is sealed to an opposing region of the sheet, inner face to inner face, to hold the tab in position.
- 20 3. A package as claimed in claim 1 or claim 2, in which the seals are formed by means of a sealing composition applied to the inner surface of the sheet within the sealing portion.
4. A package as claimed in claim 3, in which the sealing composition is also applied to the inner surface of the outer edge region of the other side of the
25 sheet.
5. A package as claimed in claim 4, in which the sealing composition is applied to the inner surface of the sheet on the other side, from the side portion substantially up to the side edge of the sheet.
6. A package as claimed in any one of the previous claims, in which no sealing
30 composition is applied to the inner surface of the flap.

7. A package as claimed in any one of the previous claims, in which no sealing composition is applied to the inner surface of the inner portion.
8. A package as claimed in any one of the previous claims, in which the tab is adjacent an outer edge of the respective side portion.
- 5 9. A package as claimed in any one of claims 1 to 8, in which the tab is spaced from an outer edge of the respective side portion by a flap region.
10. A package substantially as hereinbefore described, with reference to and as illustrated in Figures 1 to 4 or Figures 5 and 6.
- 10 11. A method of packing a generally block-shaped food product by means of a package as claimed in any one of the previous claims, the method comprising:
 - a. positioning the food product on the inner surface of the sheet in the inner portion;
 - b. folding the sheet around the product so that the product is enclosed by the inner portion of the sheet and the inner surfaces of the side portions of the seal portion are brought into abutment;
 - 15 c. forming the longitudinal seal along the abutting area;
 - d. bringing opposing inner surfaces of the end portions of the sealing portion into abutment;
 - e. forming end seals in the abutting areas.
- 20 12. A method as claimed in claim 11, the method comprising folding the longitudinal seal, the tab and flap around a fold line at the border of the inner portion and one of the side portions.
13. A method of packaging a generally block-shaped food product substantially as herein before described, with reference to and as illustrated in the
25 accompanying drawings.

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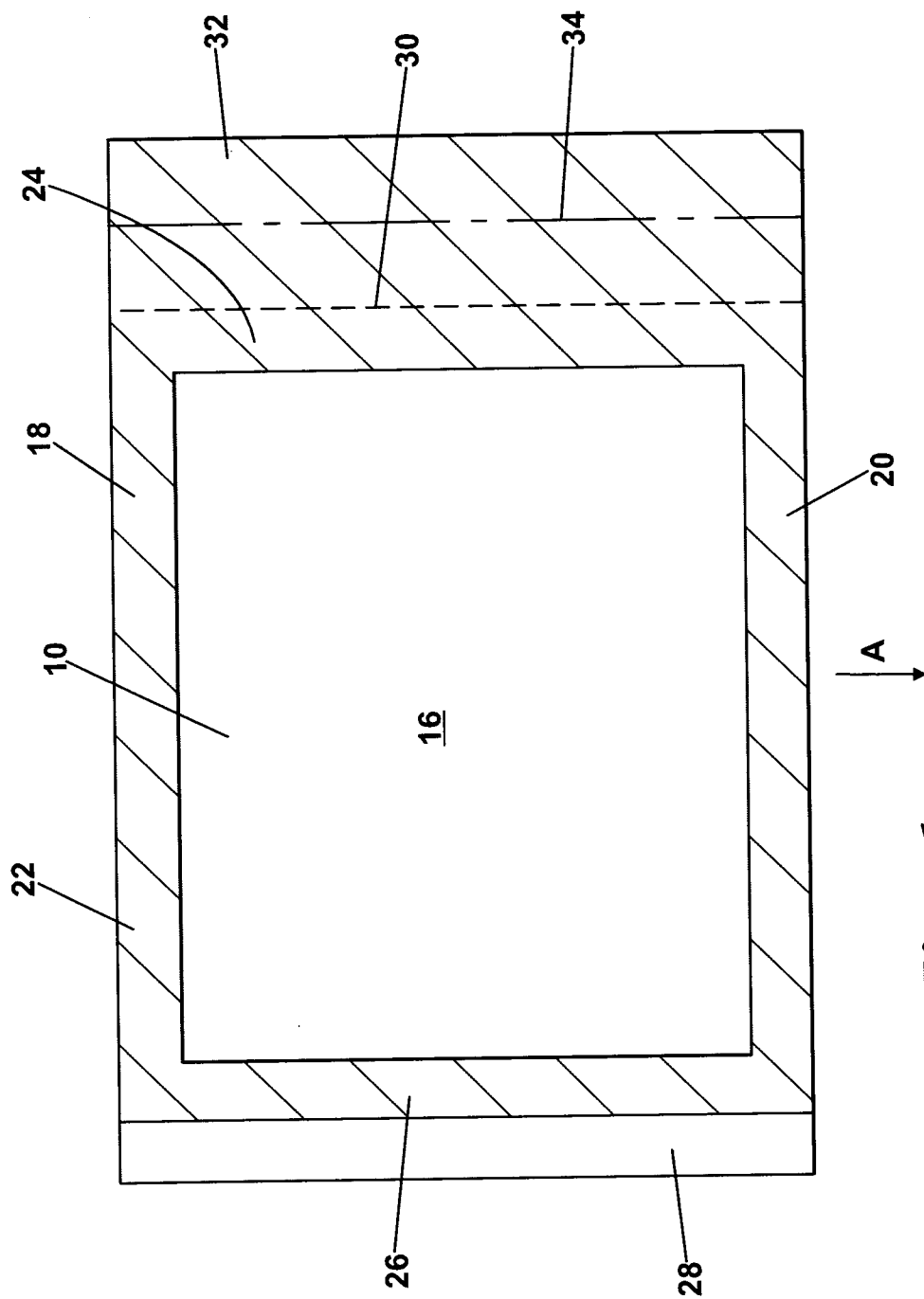


Fig. 1

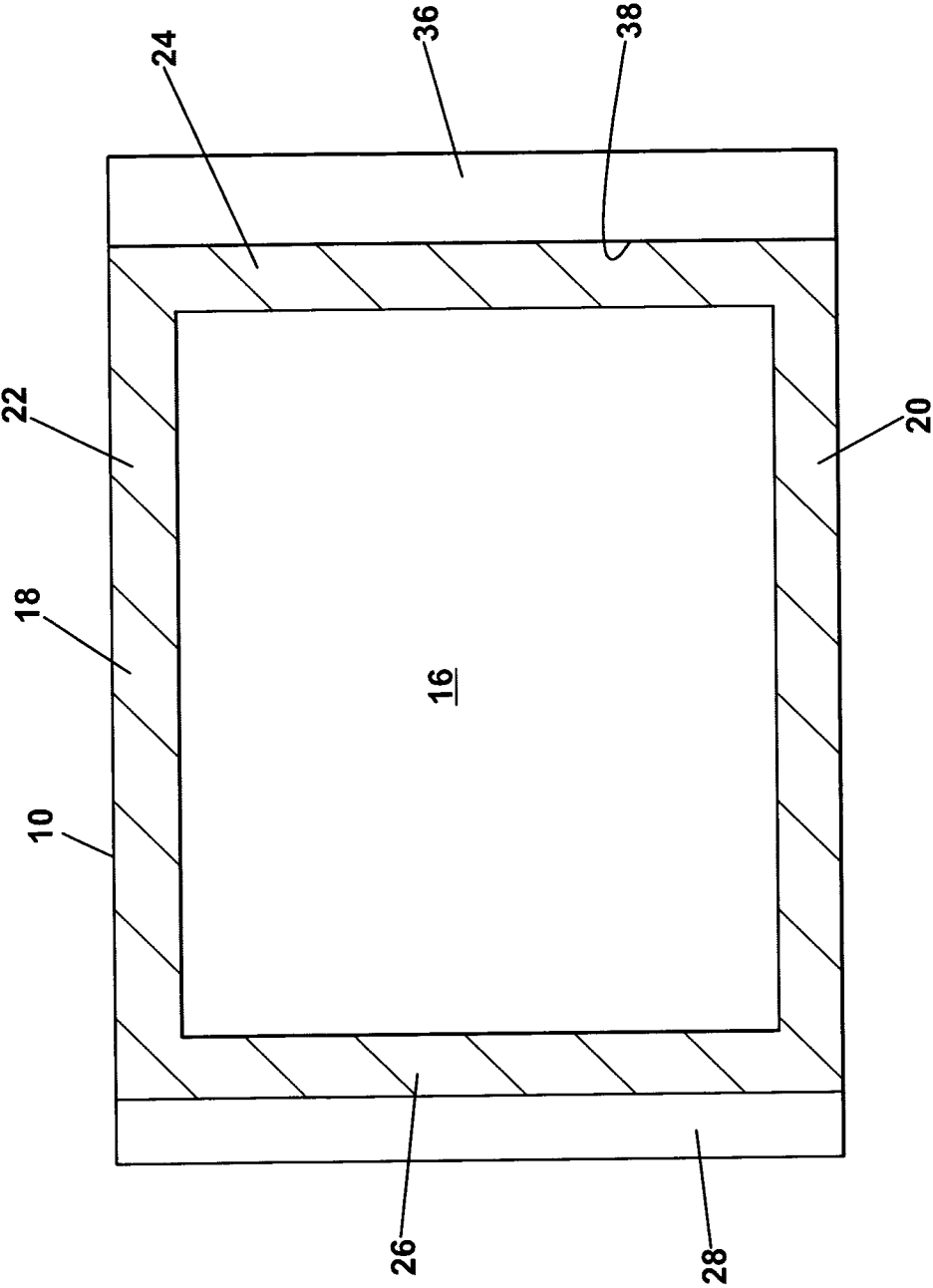
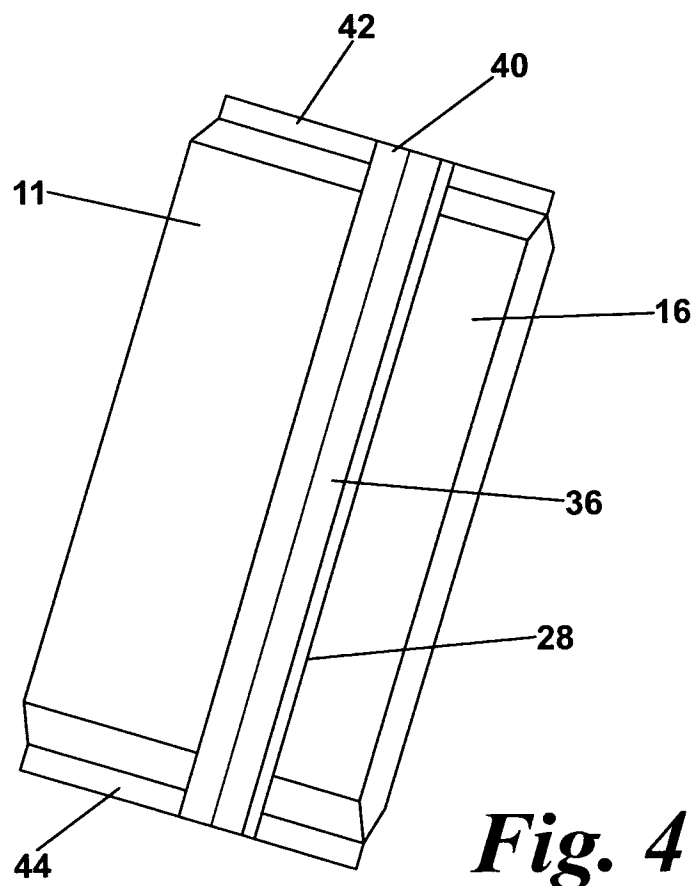
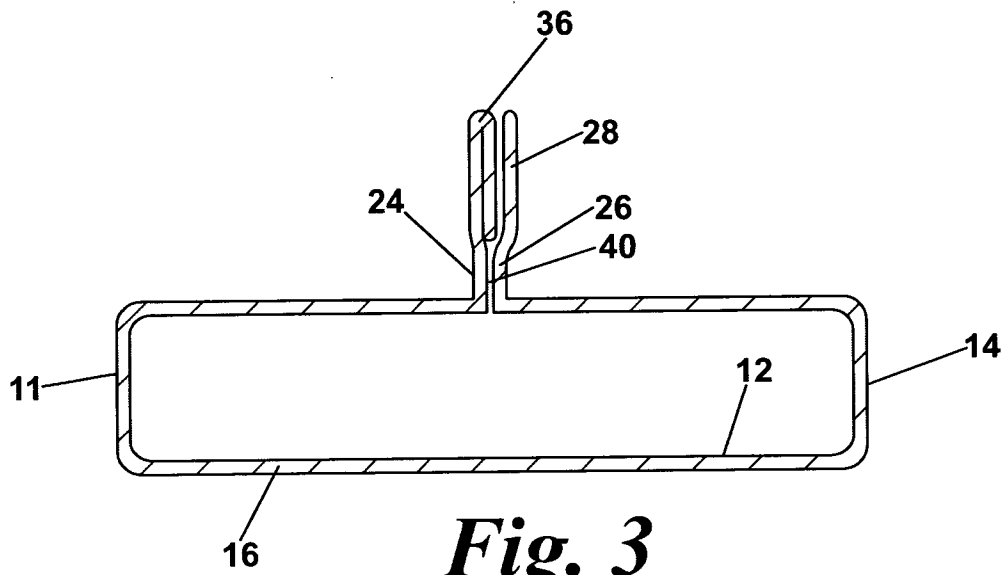


Fig. 2

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4/5

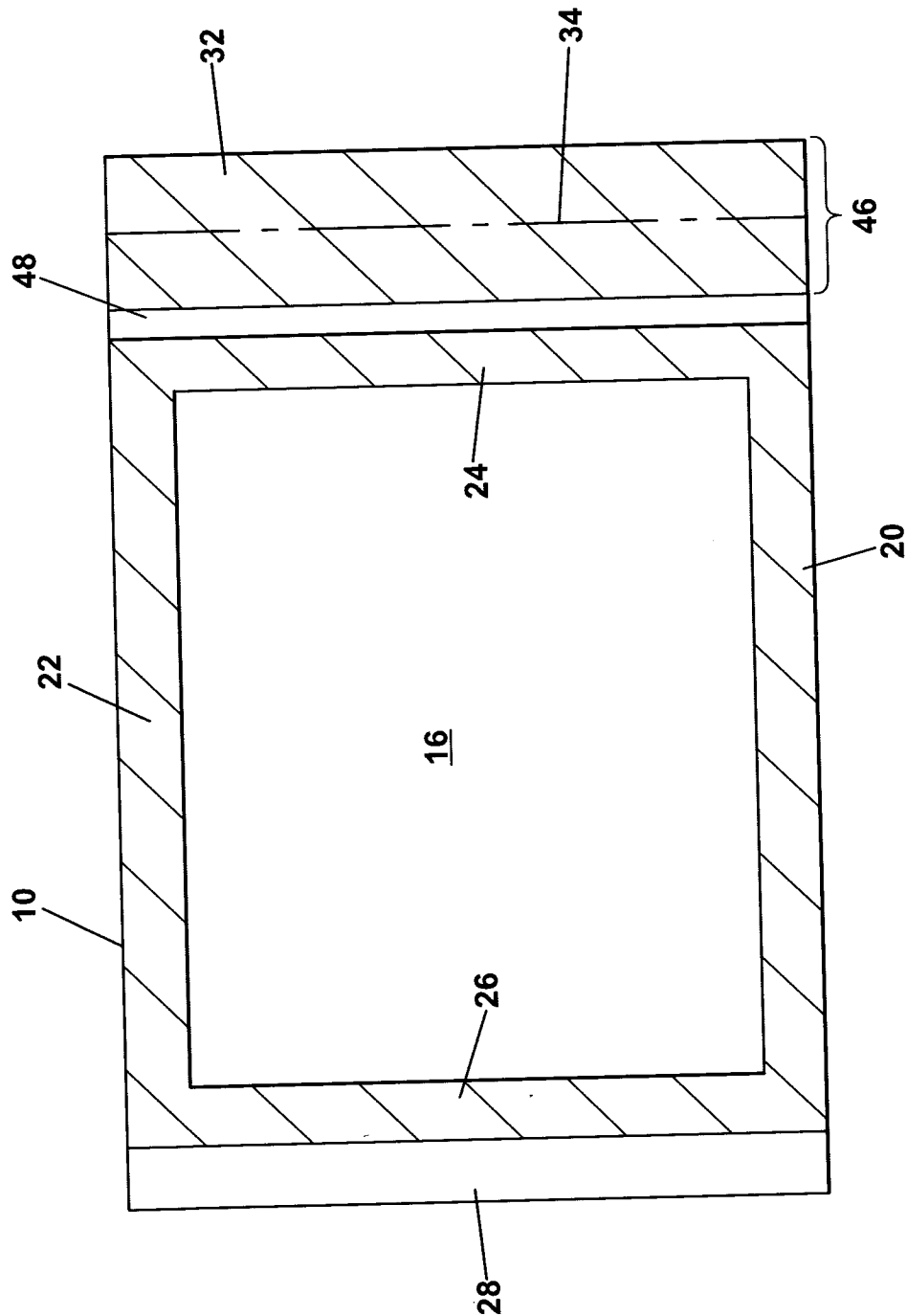


Fig. 5

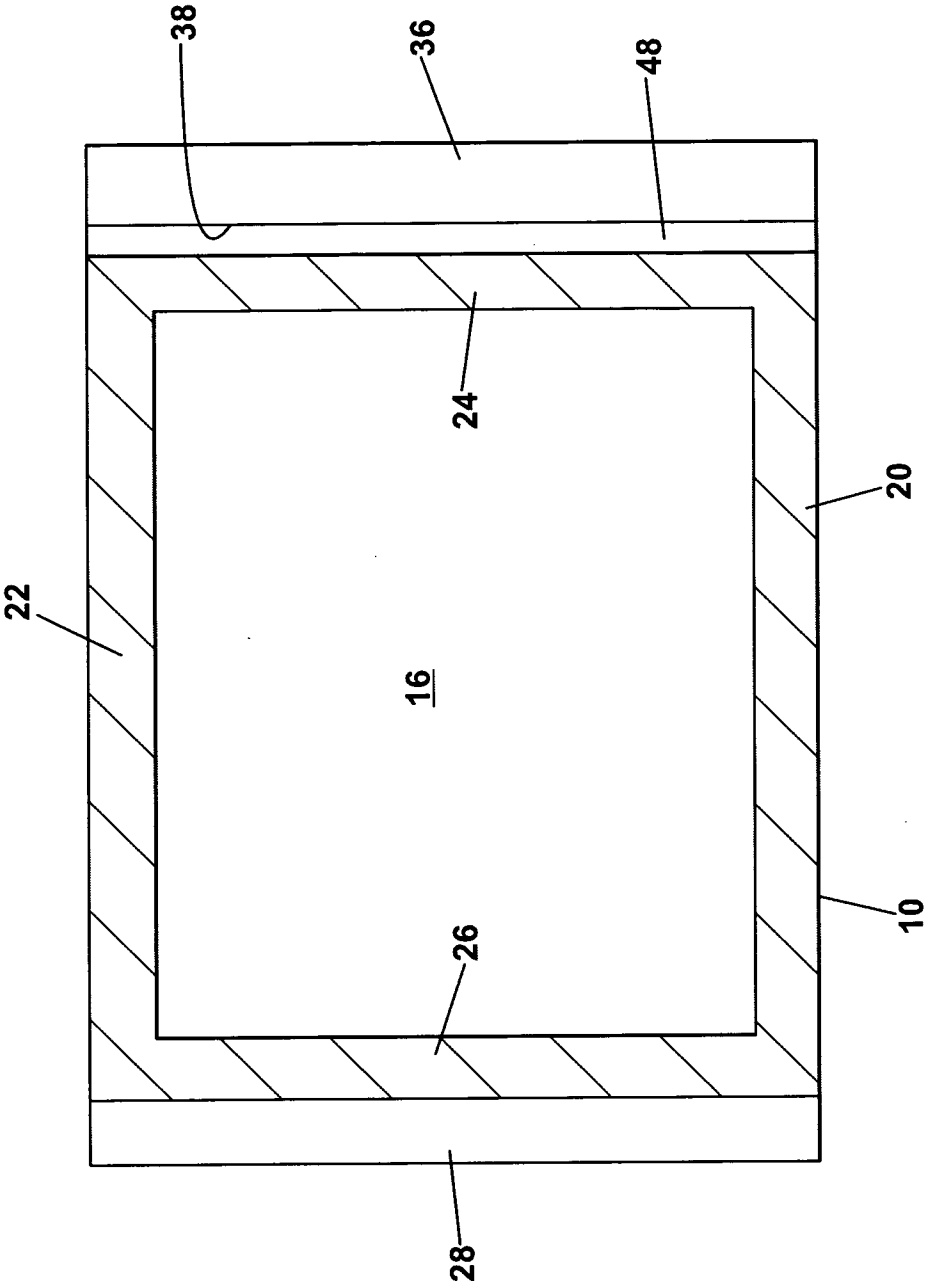


Fig. 6

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2008/004100

A. CLASSIFICATION OF SUBJECT MATTER INV. B65D75/12		
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) B65D		
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 practical, search terms used) EPO-Internal		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 826 011 A (JUD WILFRIED [AT]) 2 May 1989 (1989-05-02) column 2, line 49 - column 4, line 15; figures 1-7	1-4,6,7, 9,11,12
X	EP 0 101 298 A (JOHNSON & JOHNSON PROD INC [US]) 22 February 1984 (1984-02-22) page 12, line 2 - line 23; figure 8	1-6,8
A	EP 1 059 243 A (CRYOVAC INC [US]) 13 December 2000 (2000-12-13) figures 1B,3B	1-9,11, 12
A	GB 1 107 200 A (NAT DAIRY PROD CORP) 20 March 1968 (1968-03-20) cited in the application figures 1-5	1-9,11, 12
-/--		
☒ Further documents are listed in the continuation of Box C. ☒ See patent family annex.		
* Special categories of cited documents : *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *&* document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
27 February 2009		10/03/2009
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016		Authorized officer Fitterer, Johann

INTERNATIONAL SEARCH REPORT

International application No

PCT/GB2008/004100

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 288 139 A (KRAFT FOODS R & D INC [DE]) 5 March 2003 (2003-03-05) cited in the application figures 1-3 -----	1-9, 11, 12

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2008/004100

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: 10, 13
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers allsearchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search reportcovers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box II.2

Claims Nos.: 10, 13

Claims 10 and 13 do not comply with Article 6 PCT (clarity) and Rule 6.2(a) PCT.

The applicant's attention is drawn to the fact that claims relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure. If the application proceeds into the regional phase before the EPO, the applicant is reminded that a search may be carried out during examination before the EPO (see EPO Guideline C-VI, 8.2), should the problems which led to the Article 17(2)PCT declaration be overcome.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2008/004100

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