

OPINION UNDER SECTION 74A

Patent	GB2478028
Proprietor(s)	Linpac Packaging Limited
Exclusive Licensee	n/a
Requester	Ingenium IP Limited
Observer(s)	n/a
Date Opinion issued	07 November 2016

The request

1. The comptroller has been requested to issue an opinion as to whether GB2478028 (“the patent”) is valid in light of nine patent documents and one document offered as technical background. The request covers both novelty and inventive step arguments. All of the patent documents referred to in the request were published well before the priority date of the granted patent.

Observations and preliminary matters

2. The patentee and the requester have provided observations on the request and observations in reply. In addition both the patentee and requester have provided further submissions. Rule 96 of the Patents Rules 2007 (as amended) makes provision for observations and observations strictly in reply. There are no provisions for further rounds of observations and consequently I shall disregard any submissions after the initial observations and observations strictly in reply.
3. In their observations the patentee argues that documents should be ignored in this opinion where they have previously been considered during the pre-grant consideration of the patent or during the international and European phases of a corresponding application under the Patent Cooperation Treaty (PCT).
4. The patentee argues that such consideration constitutes “relevant proceedings” for the purposes of rule 94(1)(b) and consequently the comptroller should not issue an opinion concerning such documents. In fact pre-grant considerations do not constitute relevant proceedings for rule 94(1)(b). However, section 74A(3) of the Patents Act 1977 states:

The comptroller shall issue an opinion if requested to do so under subsection

(1) above, but shall not do so –

...

(b) if for any reason he considers it inappropriate in all the circumstances to do so.

This is the ground upon which it may be inappropriate to issue an opinion where a question has already been considered pre-grant.

5. In this case documents D1, D5 and D6 as referred to in the request were all novelty or obviousness citations during the pre-grant process for the patent and documents D1 to D6 were all listed on the search report of the PCT application. I can see nothing to suggest that documents D7 to D9 have previously been considered.
6. In the observations in reply the requester quotes the opinions manual where it refers to decision BL O/370/07. The passage is to the effect that documents cited pre-grant for novelty or inventive step purposes are unlikely to raise a new question or argument that could be considered appropriately in an opinion “other than in exceptional circumstances”. The decision did not seek to close the door entirely on reconsidering a document and acknowledged the possibility that a decision by an examiner pre-grant might be “clearly perverse” and that in such a case it may be appropriate to reconsider a document in an opinion.
7. The request and observations in reply point to amendments made to the PCT application during prosecution which is ongoing before the European Patent Office. They argue that these amendments limit the claims compared to those of the patent and that this, together with objections raised by the European Patent Office, constitute “exceptional circumstances” in which I should reconsider document D1 in particular.
8. In my view the requester has not demonstrated that the pre-grant decision of the examiner was “clearly perverse” regarding documents D1, D5 and D6 and my opinion will not consider those documents any further.
9. As noted above, documents D2, D3 and D4 have been raised pre-grant in relation to the PCT application. In the request these documents are used solely for inventive step purposes and my opinion will consider documents D2, D3 and D4, on the basis that this may constitute a new question or questions.
10. The observations and observations in reply also discuss the documents in the context of the validity of the patent. For the most part I shall consider that below. However, the observations in reply seek to argue that document D7 is relevant to the question of inventive step. This is not argued in the request or the observations. According to Rule 96(4) such observations in reply should be “*confined strictly to matters in reply*”. Consequently I shall only consider D7 for novelty purposes.

The patent

11. Entitled Container, the patent was filed on 10 January 2011, claiming an earliest priority date of 8 January 2010. It was granted with effect from 5 December 2012 and remains in force.

12. The invention relates to containers suitable for use in the packaging, storage, transportation and/or display of a product, such as a fresh food product or a medical product. A process for making a container is also claimed. The invention seeks to address the difficulty of attaching a lidding film to a container made from polyethylene terephthalate (PET) by improving on existing solutions to the problem.
13. Several embodiments are described. Figure 4, below, shows a cross sectional view of a tray or sealable container having a base, a continuous side wall upstanding from the base and a peripheral flange formed along the upper edge of the side wall. An adhesive film is applied onto an upper surface of the peripheral flange, allowing a lidding film to be sealed to the flange.

Figure 4



Claim construction

14. Before considering the documents put forward in the request I will need to construe the claims of the patent following the well known authority on claim construction which is *Kirin-Amgen and others v Hoechst Marion Roussel Limited and others* [2005] RPC 9. This requires that I put a purposive construction on the claims, interpret it in the light of the description and drawings as instructed by Section 125(1) and take account of the Protocol to Article 69 of the EPC. Simply put, I must decide what a person skilled in the art would have understood the patentee to have used the language of the claim to mean.
15. Section 125(1) of the Act states that:

For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.

16. And the Protocol on the Interpretation of Article 69 of the EPC (which corresponds to section 125(1)) states that:

Article 69 should not be interpreted in the sense that the extent of the protection conferred by a European patent is to be understood as that defined by the strict, literal meaning of the wording used in the claims, the

description and drawings being employed only for the purpose of resolving an ambiguity found in the claims. Neither should it be interpreted in the sense that the claims serve only as a guideline and that the actual protection conferred may extend to what, from a consideration of the description and drawings by a person skilled in the art, the patentee has contemplated. On the contrary, it is to be interpreted as defining a position between these extremes which combines a fair protection for the patentee with a reasonable degree of certainty for third parties.

17. All of the claims apart from the omnibus claims ultimately refer back to claim 1, which requires:

A container comprising a base and a continuous side wall extending substantially perpendicular to the base with a peripheral flange formed along the upper, in use, edge of the continuous side wall, wherein the base and the continuous side wall consist essentially of polyethylene terephthalate (PET) wherein a layer of adhesive is located on an upper, in use, surface of the peripheral flange and said layer of adhesive does not extend onto the vertical, in use, surfaces of the continuous side wall and does not extend onto the base wherein the container further comprises a lidding film which may be sealed to the peripheral flange to create a sealed space between the base, continuous side wall and lidding film; and wherein the lidding film is a multi-layer film comprising a seal layer and the seal layer comprises polypropylene (PP) and/or PE.

18. None of the request, the observations or the observations in reply explicitly discuss the construction of claim 1. They do however raise the question of whether the requirement that “*the base and the continuous side wall consist essentially of polyethylene terephthalate (PET)*” limits these parts to a PET monolayer.
19. On pages 1 and 2 of the specification one form of prior art container is discussed in which the container is formed from coated or multi-layer materials. The disadvantages of this form of container are explained. On page 3 and in claim 3 the material of the container according to the invention is further limited to recycled PET. Figure 5 is a flow diagram of a thermo-forming process according to the invention in which a sheet of pure PET is produced from which trays are formed. The waste from the extrusion and trimming processes that form the sheet and the trays in figure 5 are described as “*substantially free from adhesive or PE*” and “*substantially free of adhesive*”, allowing it to be “*recycled to produce clear product*” (see page 8). At the end of the description an example is described in which trays are formed from a monolayer of amorphous PET sheet.
20. It seems clear to me that the invention includes within its scope a container whose base and side wall are formed from a monolayer of PET. There is no description of coated or multilayer materials other than in the context of the disadvantages of the prior art.
21. On page 8 there is a description of re-admitting into the extrusion process aggregated waste from the process of forming containers according to the invention.

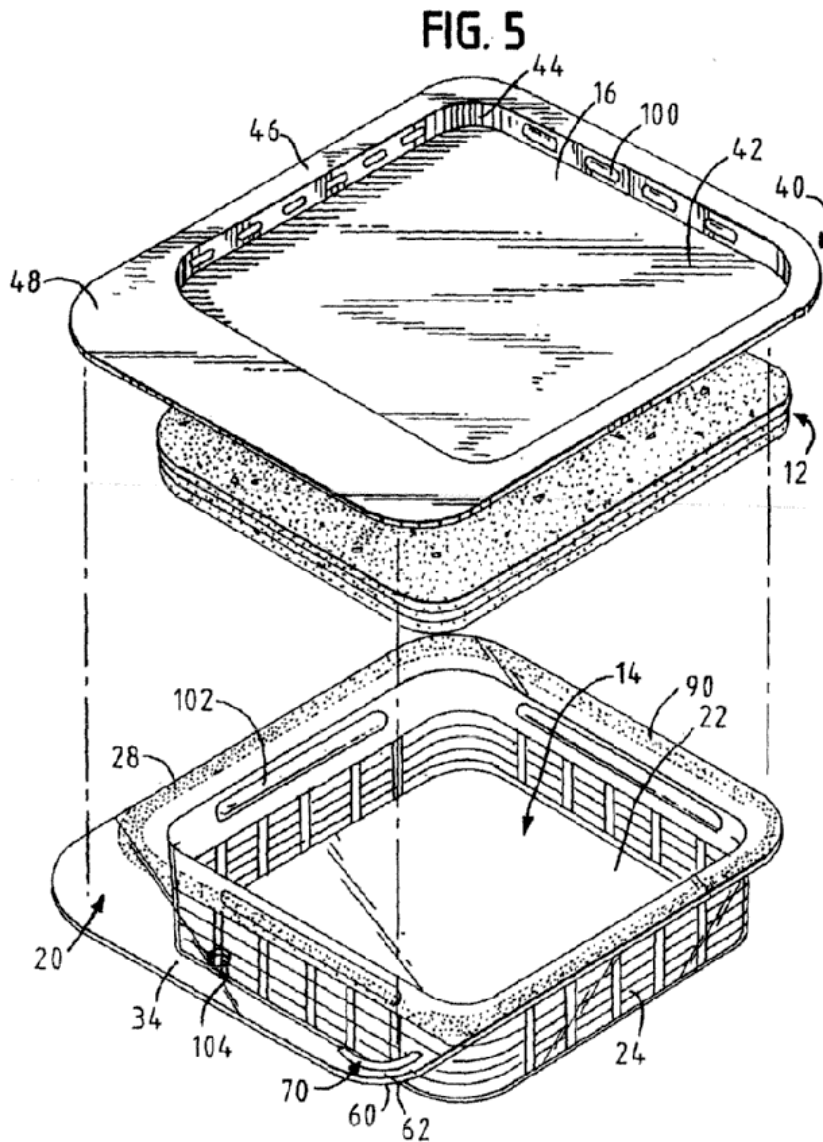
Aggregated waste means all the waste from the extrusion, web and tray steps in the process. The tray waste is described as being contaminated with adhesive, but still allowing the production of clear products when re-admitted as part of the aggregated waste.

22. I take it that “*consist essentially of polyethylene terephthalate (PET)*” in claim 1 is intended to encompass the situation when a small amount of PET contaminated with adhesive has been recycled into the extrusion process. In other words the PET need not be entirely pure. I do not believe that the phrase should be construed to cover coated or multilayer materials. I also note that it is conventional to read “*consisting of*” in a patent claim to mean “*consisting exclusively of*”, in contrast to “*comprising*” which is taken to mean “*including*”.
23. In light of document D8 a further question arises: does “*consist essentially of polyethylene terephthalate (PET)*” include multiple layers of PET? If I consider the phrase in isolation, then I might be tempted to come to the view that it does indeed include more than one layer of PET. However, reading the specification as a whole my view is that the phrase should be read to mean only a single layer of PET which need not be entirely pure.
24. Claim 1 requires the container side wall to extend “*substantially perpendicular to the base*” and to have “*vertical, in use, surfaces*”. I can find no discussion in the patent of the orientation of the side wall to assist me in construing the requirements. I do not take them to mean a wall or surface exactly at right angles to the base. Indeed I note that the embodiments as illustrated in figures 4, 8 and 9 of the patent all appear to show side walls which are not exactly perpendicular to their respective bases. No embodiment is illustrated with walls that appear to be exactly perpendicular to the base. The side wall seems only to serve to define a space within which a product may be accommodated. In effect it spaces the base from the flange and the lidding film. In order to do so it must extend away from the base. In the context of the claim I construe the terms “*substantially perpendicular to the base*” and “*vertical, in use, surfaces*” to simply mean surfaces which extend away from the base to create a space.
25. Claim 15 is directed to a method of making a container according to any of claims 1 to 9. Aside from being a process claim it introduces no requirements additional to those of claim 1. Similarly claim 21 is directed to a process for making a container, but according to claims 10 to 14. Claims 10 to 14 depend upon claims 1 to 9 and simply require the lidding film of the earlier claims to be sealed to the base, where this is optional in the earlier claims (although the presence of the lidding film is essential). The only additional requirement of claim 21 is that pressure should be used to seal the lidding film to the container.

Prior art and novelty

26. Taking the documents in the order they are discussed in the request, in figure 5, below, of document D7 or EP 1826139 a food package (10) is shown which, to quote part of the abstract, “*includes a base (20) with a food storage compartment (14) and a lid (40) selectively mateable with the base for closing the compartment. The periphery of the base has a flange (28) that abuts a corresponding flange of the lid*

(46) when the lid is mated to the base to close the compartment. Prior to initially opening the food package, the flanges of the base and lid are sealed together at a sealing area (50) surrounding the food compartment to seal the food compartment. The flanges of both the base and lid have an outwardly extending tab portion (34,48) that at least partially overlap with each other.”. It seems that the sealing area should be reference 90 rather than 50.



27. Paragraphs 0023 and 0026 describe bonding or gluing flanges 28 and 46 to preferably form a hermetic seal and paragraphs 0039 to 0041 describe the materials that may be used in the package. These may include homogeneous films, coated films, laminated films or co-extruded films. A more specific description of the material for the base is given in paragraphs 0040 and 0041 in which it is described as a multi-layered film whose outer layer may be selected from a number of materials including amorphous polyethylene terephthalate (APET). The lid is described as being a multi-layered film one of which layers may be polypropylene.

28. In their observations the patentee suggests that the base in D7 includes an outer structural layer and other layers, with no description of a monolayer of PET. They also suggest that there is no disclosure of a layer of adhesive only on the flange of the base. The observations in reply argue that “*consist essentially of polyethylene terephthalate (PET)*” in claim 1 need not be a monolayer and seek to argue in the alternative that claim 1 is obvious. I dealt with both points above.
29. I take the references to gluing the flanges to mean that the bonding or gluing is found only in seal area 90, i.e. at the upper, in use surface of flange 28 and does not extend to the vertical, in use, surfaces or the base. Although in fact there is a mention of homogeneous films, which I take to be monolayers, the only mention of PET that I can find is in the context of a multi-layer film. This means I can find no disclosure of a base and continuous side wall which “*consist essentially of polyethylene terephthalate (PET)*” as I construed it earlier. Consequently the patent is novel in light of D7.
30. In figure 1, below, Document D8 or WO 2008/017308 shows a package which “*comprises a container part 1 made of an extruded foil including at least one layer containing crystalline polyethylene terephthalate (CPET). The foil is suitable for contact with food under elevated temperatures and following storage. The CPET material may face the food in the container or a further layer of APET may face the food, or another layer of a suitable material. When CPET is used, at least 15 percent of the layer is in the crystalline state. The foil has a total thickness between 200 μm and 1300 μm . The container part 1 of the package is made by a method including a step of shaping the foil by thermoforming. A food receiving opening 7 is adapted to receive the food. The package further comprises a closure part 2 made from a second foil, which includes at least one barrier layer made of a material selected from a group comprising aluminium, aluminium oxide (AlOx), aluminium alloy, ethyl vinyl alcohol (EVOH), modified polyester with improved barrier properties, polyvinylidene chloride (PVDC), polyamide (PA) and silicium oxide (SiOx), and at least one base layer which preferably is made of polyethylene terephthalate, where the base layer is facing the food. The closure part 2 is arranged to close and seal the receiving opening 7 of the container part 1. The container part 1 may have a rim 4 adapted to receive the closure part 2, such that a sealing film can be sealed to the rim 4 without contact to the unshown food in the package.*” (see page 7). According to dependent claim 4 “*the closure part is attached by gluing or welding.*”

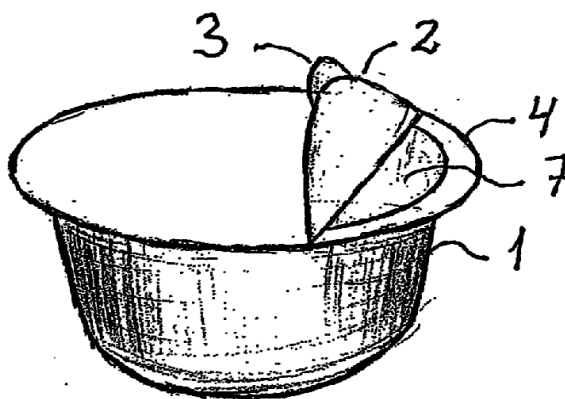
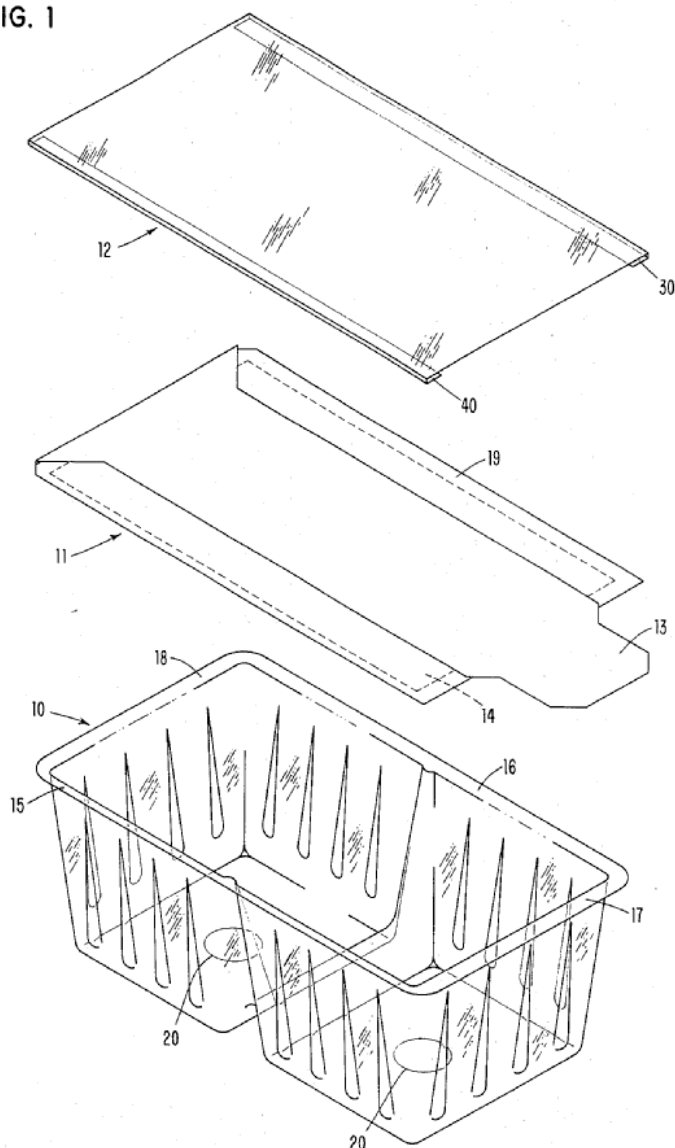


Fig. 1

31. The request highlights that the closure may be formed from “*modified polyester with improved barrier properties*” (see above), presumably taking this to be synonymous with polypropylene and/or PE. The observations suggest that the base in D8 is formed from a multilayer laminate foil rather than a monolayer, that it is the barrier or outer layer of the closure part that may be formed from “*modified polyester with improved barrier properties*” rather than the seal layer and that D8 is silent as to where the adhesive attaching the closure part may be applied. The observations in reply repeat the argument regarding a PET monolayer and suggest that the only logical place for adhesive would be on rim 4.
32. Clearly the container in D8 can be made from a form of PET and the long passage quoted above suggests that other layers may be optional. However, in D8 both claim 1 and the summary of the invention on page 3 require a multilayer laminate foil for the package. I do not feel that the phrase “*including at least one layer containing crystalline polyethylene terephthalate (CPET)*” within the quote above is intended to mean a monolayer, but rather describes an embodiment where at least one of the several layers contains CPET. The long passage quoted above also describes a foil having a layer of CPET and a layer of APET with no requirement for any other layers. However, claim 1 as I have construed it is limited to a single layer of PET with no other layers or coatings. I agree with the patentee’s point that the seal layer of the lidding film in D8 does not comprise polypropylene and/or PE. I do think that it is implicit in the disclosure of D8 that the adhesive referred to is applied only to the flange 4. Since there is no disclosure of a container formed from a single layer of PET or lidding film with a PP and/or PE sealing layer, D8 does not anticipate claim 1 of the patent.
33. According to column 2 of D9 or US4538651 figure 1, below, shows a container 10 which is “*formed of polyethylene terephthalate, about 0.030 inch thick. Slide 12 is formed of polyethylene terephthalate about 0.012 inch thick. Strip 11 is a paper, cloth-like material known as TYVEK (a polyethylene fibrous sheet formed of randomly oriented, bonded polyethylene fibers, and possessing non-directional shear strength).*”. Note that TYVEK is a registered trade mark. Column 2 also explains that “*The portion of strip 11 that faces the toner is covered by a thin, low-surface-energy layer 14, such as a lamination of nylon 0.003 inch thick. Other acceptable low-surface-energy materials are nonbiaxially oriented polyethylene terephthalate. Layer 14 does not have a high affinity for toner, and thus very little toner is carried out of the cartridge during the process of removing strip 11.*” and “*The boundary of the housing’s dump opening includes a continuous flange 15, 16, 17, 18 which encircles this opening. Surfaces 15, 16, 17, 18 lie in a common plane. The corresponding boundary area 19 of strip 11 is glued or otherwise sealed to flange 15, 16, 17, 18, using a releasable, peelable adhesive. An exemplary sealing process utilizes a commercially available adhesive, a pressure of 50 psi, and a temperature in the range of 230 DEG to 250 DEG F., which are maintained for from two to five seconds.*”

FIG. 1



34. The request and observations in reply point out that claim 1 is directed to containers and not to food containers, although the observations suggest that the material from which strip 11 is formed is not suitable for use in food applications, in part because TYVEK (RTM) is permeable to gases. The observations go on to expand on this point to the effect that D9 belongs in the field of electrophotographic reproduction, quoted from the opening paragraph of D9, a field they suggest is remote from food packaging. In the observations it is said that the strip 11 does not form a multi-layer film comprising a seal layer which comprises PP and/or PE. They also point out that D9 is silent as to the location and extent of the adhesive used to glue the strip to the flange. In the observations in reply the requester is of the view that the randomly oriented, bonded polyethylene fibers of D9 constitute multiple layers of fibres that will overlap in part and that placing adhesive into an area where it is not required would not be done.
35. I agree with the requester that claim 1 as drafted is not limited to food packaging. I also note the opening paragraph of the description of the patent which places the

invention in the field of “*containers suitable for use in the packaging, storage, transportation and/or display of a product, such as a fresh food product or a medical product*”. Whilst D9 declares itself to be concerned with electrophotographic reproduction, it nevertheless discloses a container “*suitable for use in the packaging, storage, transportation and/or display of a product*”. That the product in D9 is toner seems to me to be immaterial. Since claim 1 is not limited to food packaging or gas impermeable lidding films the question of gas permeability is moot, but I note that the strip 11 in D9 comprises TYVEK (RTM) and a second layer of nylon or PET. To my mind the phrase “*glued or otherwise sealed to flange 15, 16, 17, 18*” should be taken to mean that the glue is applied to the flange and not to the remainder of the container. Irrespective of whether the randomly oriented, bonded polyethylene fibers of strip 11 form multiple layers, strip 11 is a multi-layer film by virtue of those fibers forming one layer and the low surface energy layer 14 forming a second layer. It is not entirely clear if layer 14 extends over the whole of the surface of strip 11 including the boundary area 19 which is to be glued to the container. Layer 14 is said to be of low surface energy which I take to imply that the boundary area 19 of strip 11 to be glued is not covered by layer 14. Hence the boundary or seal layer of strip 11 comprises polyethylene in the form of polyethylene fibres. Consequently D9 anticipates claims 1 and 15. Since the passages quoted above refer to applying pressure to seal the strip to the flange, D9 also anticipates claim 21.

Inventive step

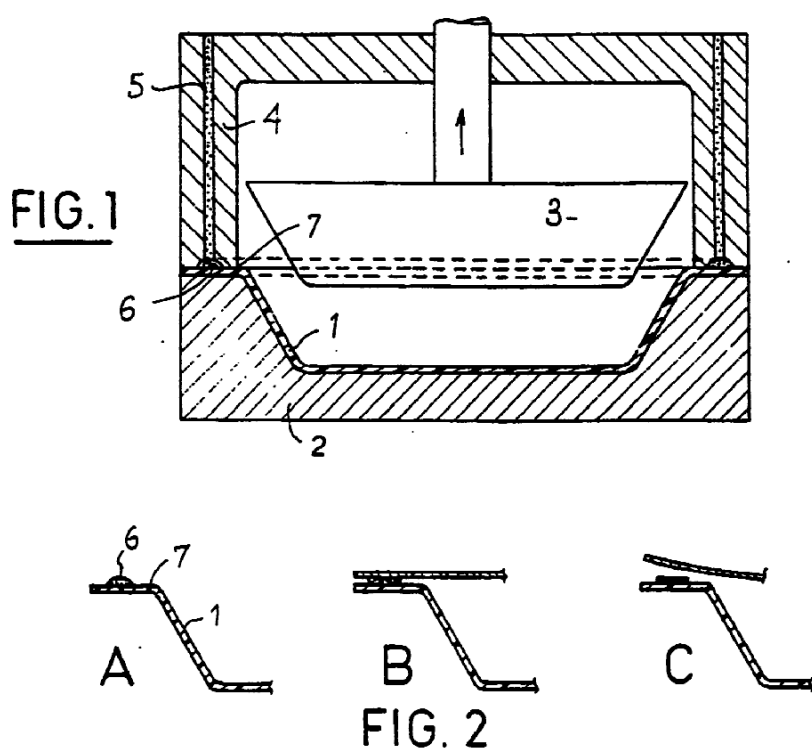
36. To determine whether or not an invention defined in a particular claim is inventive over the prior art, I will rely on the principles established in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588, in which the well known Windsurfing steps were reformulated:

- (1)(a) *Identify the notional “person skilled in the art”;*
- (1)(b) *Identify the relevant common general knowledge of that person;*
- (2) *Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;*
- (3) *Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;*
- (4) *Viewed without any knowledge of the alleged invention as claimed, determine whether those differences constitute steps which would have been obvious to the person skilled in the art.*

37. The request follows the reformation above and I agree with their identification of the notional person skilled in the art as being one skilled in the manufacture and supply of containers used in the packaging, storage, transportation and/or display of a product such as a fresh food product or a medical product. I do not disagree with common general knowledge that the request assumes of that skilled person especially his knowledge of plastic materials conventionally used for such containers.
38. The request goes on to argue that claim 1 lacks an inventive step in view of D2, i.e. the “matter cited” in the Pozzoli reformation. In their observations the patentee argues that D2 should be disregarded in my opinion on the basis that it was listed on the international search of the corresponding PCT application and would have been

sufficiently considered by the examiner pre-grant. The patentee offers no further observations on D2 and inventive step. I have already accepted that D2 might raise a new question and so I will consider the document.

39. Document D2 or EP 0440550 A1 is a French language patent application. The request also provides a machine translation of the specification from the European Patent Office's Patent Translate Service and an equivalent granted Australian patent AU 638092B2, referred to as D2*. The machine translation appears to be dated 25 May 2016 and I shall disregard it in my opinion since this is well after the priority date of the patent. I will however base my opinion on D2* for ease of discussion.
40. In figures 1 and 2, below, D2* shows "a container 1 such as a dish-shaped container for sterilizable foods which is thermoformed from a multi-layer sheet (PP/adhesive/EVOH/adhesive/PP 1.2mm thick), by means of a multi-stage thermoforming mould comprising in particular a mould 2, a punch 3 and a blank holder 4. The blank holder 4 is provided with a duct 5 for supplying a thermo weldable material (Bynel (registered trade mark) of the firm Dupont de Nemours) which is injected in the form of a bead 6 onto the edge portion or flange 7 of the thermoformed container 1. This bead 6, which has a substantially parti-circular shape, will serve as a means for sealing the container 1 after the latter has been filled with a food or biological product and has been covered under pressure and in the hot state by a sheet of PET/aluminium/lacquer acting as a cover. This container is easily opened by pulling away the cover, even after treatment such as sterilization for one hour at 121 C and a thermal shock of -20 C and +40 C."



41. D2* also describes the materials for the container more generally on pages 3 and 4:
- "... the single- or multi-layer sheet employed for producing containers such as dish-

shaped containers, pots, etc. , may be chosen from the thermoformable plastics materials usually employed in the food or pharmaceutical industry, in particular the singlelayer sheets based on polyolefin (e. g. polypropylene, termed PP), polystyrene or polyester, or the multi-layer sheets employing these same products ...

The peelable closure (or cover) may be composed of a single- or multi-layer sheet usually employed in the food or pharmaceutical industry, e.g. aluminium/polyolefin, PET/aluminium/lacquer, plastified paper or a single- or multi-layer plastics material as defined hereinbefore for the material of the container.

According to an embodiment of the invention, the thermoweldable material ensuring the sealing of the container is injected onto the container, in particular onto the edge portion of the latter, along one or more continuous and closed lines extending around the container and termed hereinafter beads.

...

This region depends on the choice of the material of the bead and on the choice of the material of the couple bead/container or cover support. Thus, in the usual case where the surface of the container is of polyolefin, the thermoweldable material will be chosen in particular from polyethylene, a polypropylene or their copolymers with vinyl acetate, etc.; modified by a carboxylic acid or the esters thereof, such as an acrylate or methacrylate, by an isoprene, styrene-butadiene rubber, etc. , such polymers being usually termed "adhesive" by manufacturers, for example the products named Escor of the firm Exxon, Bynel of the firm Dupont de Nemours; Orevac of the firm Ato, Admer of the firm Mitsui and Modic of the firm Mitsubishi, all of which are registered trade marks."

42. D2* seems to explicitly disclose most of the requirements of claim 1. I note that the side wall of the container illustrated in D2* diverges from being absolutely vertical to the base much more than the side walls illustrated in the patent. However, the side wall in D2* does serve to space the flange and its closure from the base and so to my mind is "*substantially perpendicular to the base*" and has "*vertical, in use, surfaces*" as I construed the requirements earlier. Hence for me this is not a difference between the matter cited and the claim.
43. The request highlights that the material of the container in D2* is not said to be polyethylene terephthalate (PET). I agree that this is the difference between D2* and the claim. The only explicit use of the term PET in D2* is in the context of the peelable closure, i.e. the lidding film in the language of claim 1. Amongst others, the material of the container in D2* could include "*singlelayer sheets based on ... polyester*". My understanding of the term polyester is that it describes a category of polymers that includes PET. I do not believe that a passing reference to polyester would be sufficient to question the novelty of a claim requiring PET. However, such a reference to my mind is sufficient to say that a skilled person would think it obvious to select PET from the broader category of polyester, given his knowledge of plastic materials used in such packaging.
44. Consequently claim 1 is obvious in light of D2*.

Dependent claims and omnibus claims

45. The request and observations in reply briefly suggest that all of the remaining claims, apart from claims 18 and 25, lack inventive step based upon documents D1, D3, D4, D5 and D6. Apart from identifying passages in the four documents there is no real argument offered. Leaving aside D1, D5 and D6 for reasons I explained earlier, there is no novelty or inventive step attack against claim 1 in the request using D3 or D4. I assume therefore that the intention was to somehow combine these documents with the documents used to attack claim 1. However, such combinations are not explained and nor are any other arguments regarding the inventive step in the dependent claims. I do not propose to fill the gap and I offer no opinion on inventive step in the dependent and omnibus claims.

Opinion

46. It is my opinion that claims 1, 15 and 21 are not new in light of patent document US 4538651. It is also my view that claim 1 is obvious in light of patent document AU 638092B2.

Application for review

47. Under section 74B and rule 98, the proprietor may, within three months of the date of issue of this opinion, apply to the comptroller for a review of the opinion.

Karl Whitfield
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.