

Examiners' Comments

P4 2012

General comments

The 'answer' to this year's paper was a claim directed to the idea of reducing the amount of hot air escaping from the oven (the client's letter, third paragraph). Most candidates identified the need for sealing means (ideally as dividing walls) on the platform cooperating with the housing. However, the dividing walls alone will not provide significantly reduced heat loss. It is necessary to combine these with the feature of intermittent drive to enable the walls to stay in register with the housing for a period of time during the baking cycle. Candidates who relied on the dividing walls alone could still pass, but they were working with a less defensible claim and required good inventive step arguments. As always, it is important to ensure that features relied on in your arguments are actually present in the claim.

A (continuing) failing in candidates' answers is not providing adequate justification for the answers that have been given. While this justification can assist the Examiners in deciding whether or not a candidate is aggressively pursuing their client's interests on the one hand, or has a fundamentally flawed appreciation of novelty and inventive step on the other, providing an adequate justification to the client for actions that have been taken is an essential part of a qualified attorney's practice, both in terms of managing liabilities and providing a good service to clients.

Some Candidates answers gave the impression that they did not fully understand the invention. There is little guidance that can be given on this point other than to try and spend a little longer analysing the invention and a little less on 'turning the handle' on an answer.

Brief introduction to the paper

GB 0909090.9 ('the application') concerns a pizza oven having a rotating turntable divided into arcuate segments by dividing walls, the turntable being mostly located inside an oven chamber except for one portion which is exposed in an access area for the loading and unloading of pizzas (or other foodstuffs). The turntable is intermittently rotated by one segment at a time so that each segment is rotated into the access area in turn. When the turntable has finished each move, the dividing walls of the exposed segment co-operate with radial walls in the oven housing to seal the oven and prevent hot air escaping. A pizza cooks in the time it takes to rotate from the access area through the oven and back again.

GB 1 111 111 ('D1') discloses a pie oven similar to the pizza oven of the application in suit in which a turntable is fully enclosed within the oven chamber. Pies can be loaded or unloaded by opening one of two doors in the housing (which can alternatively be latched open), or at as and when required by removing a portion of the housing to expose the turntable.

Pizza World Monthly ('D2') discloses a conventional linear conveyor-belt-style oven in which a door may be provided at either end of the heating chamber. The door is raised and lowered to allow the passage of pizzas under the control of a photodetector.

Claim 1

25% of marks were allocated to Claim 1. An amendment to Claim 1 was sought which was directed to the advantage of the improved heat efficiency of the oven. A typical amendment includes the features of the the platform being divided into arcuate segments by dividing

walls such that whenever the platform was rotated through an integer multiple of segments, the dividing walls cooperate with the oven housing to seal the oven. A more defensible claim also includes the feature of the platform being intermittently driven through the said integer multiple of segments.

Though the feature of the dividing walls on the platform is novel over the prior art and is at least non-obvious, the advantage of improved efficiency of the oven is arguably only achieved in conjunction with the intermittent drive feature, because otherwise the oven would be unsealed for substantially all of the time that the platform was rotating (if continuously driven), resulting in a performance no better and possibly worse than some of the prior art ovens. Very few candidates appeared to appreciate this point, though some specified that the walls sealed against the housing “when the platform was rotated through an integral number of segments”, or similar, which was at least in the right direction.

Another amendment that was expected was to broaden the claim to an oven for foodstuffs (or similar), rather than just pizza, since the client had a clear interest in the broader scope (client’s letter, fifth paragraph) and there was adequate basis to do so (application, page 1 lines 1, 10 etc.). An ‘oven’ *per se* might arguably be too broad, as it might for example cover kilns and the like that were not contemplated in the application as originally filed and so ‘an oven for baking foodstuffs’ was preferred.

A broader choice of amendment was to provide (merely) a ‘sealing means’ on the platform (cf. original claim 4). While novel over the prior art and commendably brief, it was felt that it was too broad to be supported and arguably not inventive, because some reasonable constructions of the claim would be disadvantageous with respect to the prior art, in particular undermining the inventive step argumentation put forward. It may alternatively be objected to as lacking an inventive step as being a ‘free beer’ (desideratum) style of claim. Under European practice, a clarity objection would likely have been raised on the basis that the claim lacked essential features, and the same objection could potentially be raised in the UK (though this occurs less frequently than in Europe in practice). Other amendments were possible which provided novelty but generally they were judged to fail the inventive-step test or which went into excessive structural detail and so were too limiting.

Understandably, some candidates used the term ‘spokes’ instead of ‘walls’ to describe the sealing means, as the description refers frequently to ‘spokes 29’. The spokes described were T shaped, to provide an upstanding wall. A ‘wall’ on a platform arguably implies a protrusion above the platform, whereas a spoke, in the absence of some functional limitation, may generally be flush with, internal to, or protruding beneath a platform for support (as is in fact the case in D1, with radial arms 17 supporting the turntable). Thus care must be taken to ensure that on the one hand the term used is not actually broader in scope than the original disclosure and on the other hand that it does convey the limitation you intend.

There was some ambiguity in the specification as to what features the sealing means of claim 4 referred to, but candidates needed to take care not to muddle things further by re-defining the terms used in the original claims (in particular the ‘radial walls’, the ‘dividing/vertical/upstanding walls’ and ‘sealing means’ of the dependent claims).

Introducing the feature of intermittent rotation of the platform without also specifying that the platform advanced through integer multiples of arcuate segments was considered to add matter, because no alternative to rotating through integer multiples was disclosed in the application, and the skilled man would readily appreciate that rotating by other amounts would have a material effect on the operation of the invention (namely that the oven would not be sealed after each rotation) (cf. page 4 lines 16 to 18, page 6 lines 28, 29 and original claim 6, for example). This also creates an inventive-step problem. An amendment whose

novelty resided solely in the intermittent-rotation feature might well be considered to lack inventive step in view of the carousel drive mechanism mentioned by the client, as is explained later under Inventive Step.

Mathematically speaking, an ‘arcuate segment’ is believed to be the *mot juste* for the shape of the pizza-holding grids of the present invention (which are essentially four sectors/quadrants with a circular portion, i.e. the rotor hub, chopped out of the middle of the arrangement). Therefore both ‘segments’ *per se* and ‘sectors’ are technically inaccurate descriptions of the platform portions, but were not considered so inaccurate in the context of the application as to constitute a significant clarity issue.

It could be argued that the original claim was unclear, and amendments were possible which clarified that the access area was a truncated corner of the oven (although it doesn’t have to be at the corner), that (radial) walls were provided in the oven housing to cooperate with the dividing walls, that the housing means only *partially* surrounded the platform to define an oven area, and so on. On the other hand, no clarity objections were raised by the Examiner; clarity is not a ground for revocation of a patent; and the claim appeared adequately clear in the context of the application taken as a whole, so there seemed to be no pressing need to fix these problems, and, as always, every added feature represents a possibly unnecessary narrowing of the claim scope.

Some candidates also seemed unsure or unaware of the meaning of the ‘whereby’ clause. Generally a ‘whereby’ clause is considered non-limiting, though in practice it may often be used to assist in claim construction and will therefore imply some limitation. Nevertheless, because of its (generally) non-limiting character, deleting a whereby clause is not normally objectionable, though in the present case doing so appeared to serve no useful purpose and was potentially disadvantageous considering that the claim was not terribly clear to begin with. Inserting features between the platform rotation feature and the ‘whereby’ clause, produced an inelegant claim because the latter clause provided a clarification of the former features, and did not make particular sense when appended to other features.

Dependent claims

10% of the marks were allocated to the dependent claims. Credit was given for a sensible choice of additional dependent claims and for appropriately adapting the existing dependent claims to match the amendments to Claim 1.

If a candidate chose the ‘less defensible’ amendment to Claim 1 (i.e. not including the intermittent-drive feature) they were expected to maintain this feature in the dependent claims as a primary fallback position. Candidates were expected to retain all reasonable fallbacks in the claims even if they were proposed to be protected separately in a divisional application with a different claim scope to Claim 1 (such as the air jet/nozzle features, in particular).

Credit was generally given to dependent claims directed to the following features, for example because they had an advantage associated with them (indicative of the presence of inventive step), or were otherwise considered to be reasonable fallback positions:

- The sealing means includes radial side walls attached to the oven housing (41, 42) and/or the cooperation between these side walls and the dividing walls on the platform
- Hot air jets move at more than 32 m/s when they exit the nozzle
- The foodstuff is a pizza
 - The nozzles of Claim 3 are shaped so that the jets of heated air have a velocity at the point of contact with the pizza sufficient to cause temporary

displacement within the toppings portion (because in pizzas this causes faster cooking)

- The circulating means is disabled while the turntable is rotating (this reduces hot air escape during transition) – but this was a poor/nonsensical claim if not dependent on the intermittent drive feature
- Basket-like grids are provided in individual sectors of the platform
 - The basket-like grids are invertible (allows cooking height to be altered without making adjustments inside the oven)
- The radial side walls terminate a substantial distance above the platform
- The turntable is divided into four segments
- Specifically there are three segments for the oven and one for the access area
- The hoop/hub/spoke arrangement
- The turntable is at rest at least five times as long as in motion
- The turntable is rotated during a period of 5 seconds approximately every two minutes
- The oven provides a forced draft of heated and reheated air

Some dependent claims did not generally attract marks, for example because they were considered to be commonplace in prior art ovens or otherwise unhelpful:

- Kit of parts, method claims, process claims and other claim types that are neither useful nor clearly disclosed in the application as filed
- Length of cooking times and temperature of oven
- A portion of the turntable is located outside the baking chamber (disclosed in D1 and arguably D2)
- Segments can fit at least one / three pizzas (a clarity issue – how big is a pizza?)
- The oven rests on legs/frame
- The finishing oven
- The structure of the oven wall (including insulation etc)
- The structure of the motor
- The structure of the conduit/fans/heater

Many dependent claims involved potential clarity issues, such as those defined in terms of the size of a pizza (how big is a pizza?) or in terms of properties of the hot air jets (such as their velocity and their effect on pizzas, which would depend on construction details of the oven and suchlike). The hot air jet claims were considered to provide very desirable fallback positions despite this issue, but it was hoped that candidates would acknowledge the problem in the client memo (few, if any, did).

No excess claims fees are payable in the UK but it should be noted that very large numbers of dependent claims may be objected to on clarity grounds. Full credit was not given when candidates appeared to be taking a ‘scattergun’ approach and including very large numbers of dependent claims regardless of merit.

Divisional applications

5% of marks were allocated to divisional applications. As with Claim 1, there was no set form of divisional claim that was preferred, but generally a good mark would be awarded to a claim that included the original Claim 1 (directed to a pizza oven), the circulating means of original Claim 2, and at least the nozzles for directing jets of hot air from original Claim 3.

There was a risk that the nozzles *simpliciter would* be considered obvious in view of the vents 54, 56 of D2, so there was an argument for including either (a) the feature of the hot air jets temporarily displacing the toppings of the pizza, or (b) the jets having a velocity of at least 32 m/s when leaving the nozzle. It was felt that the need for this divisional was signposted quite clearly in the final paragraph of the client's letter.

Though features (a) and (b) were considered more defensible, they also introduced the clarity issue mentioned above, since nozzles of a certain velocity may or may not cause displacement in the toppings portion depending on the distance between nozzles and pizza and the consistency of the pizza itself. Also the velocity of the jet leaving the nozzle depends on the oven that is used; overall this feature (b) is probably more clear than feature (a) but arguably less useful.

It was felt that there was insufficient support in the application for a divisional claim directed only to a portion of an oven (such as a circulating means or the like) and, even if so, there would be considerable problems with clarity. Similarly it was felt that there was insufficient basis for a claim that omitted substantive features of original Claim 1.

It was also considered incorrect to have a divisional claim directed to a general oven (rather than a pizza oven) if it included feature (a) above, as is explained in more detail below.

Letter to Patent Office

35% of marks were allocated to the response to the examination report, split between basis/support, novelty, inventive step and clarity headings.

- Basis/support

Generally speaking a candidate can achieve a pass mark for this section by correctly listing page and line numbers for each claim, but usually there is more to do in order to get full marks. This section may be penalised if the claims are considered to add subject-matter; this was a relatively common occurrence this year.

Though the application in at least one place refers to 'arcuate segments' and not 'equal arcuate segments', this does not mean that there is adequate support for *unequal* arcuate segments (which was often implied in Claim 1 by a dependent claim directed to no more than the feature that the segments are equal). It is considered that a skilled man would readily appreciate that the invention would not work if the spacing between dividing walls on the platform was not equal: that is, if the adjacent walls on the platform could not align with the radial walls of the oven housing (since otherwise a seal would not be formed), and he would therefore be of the opinion that having 'equal' arcuate segments was an essential feature of the invention.

There was plenty of support on the first page of the application to justify broadening Claim 1 to cover ovens for foodstuffs (rather than for pizzas specifically), and more than a mere page and line reference was expected in this regard.

Amendments were considered to add subject-matter if they added qualifiers, such as 'substantially' or 'approximately', that were not disclosed or suggested in the original patent application. Also, claims that were broadened to refer to 'at least N walls/spokes' and the like were potentially problematic, particularly if N could be 1; in some cases an argument could have been made in support of the amendment but often only a page and line reference was given, without any acknowledgement in the client memo that the amendment in question might have been 'sailing close to the wind'. In these cases it was not clear whether or not the candidate had a proper grasp of added subject-matter.

A common error in the dependent or divisional claims was to broaden the feature of the air jets having sufficient velocity to temporarily displace the toppings layer of a pizza, so as to cover foodstuffs more generally. This was considered to add matter because the original disclosure was limited to pizzas and contained features specific to pizzas (toppings) and resulting advantages also specific to pizzas (namely, displacing the toppings portion is advantageous because the sauce layer underneath conducts heat more effectively), such that the skilled man would consider the limitation to pizzas to be material to the invention and would have no expectation that the feature could be used more broadly.

- Novelty

Candidates need to show that they have, themselves, checked the amended claim is novel over the prior art. If it is felt that such an analysis is too much for the IPO letter, then it can go in the client memo.

Some marks can be obtained merely by identifying features of Claim 1 that are not disclosed in the prior art, but the examiners want to see more evidence that a candidate understands the cited prior art and the invention – for example by identifying correspondences between features of Claim 1 and each prior art citation, before identifying features of Claim 1 that are not present in the citation (that is, the points of novelty). This may be done in the letter or in the consideration of the citations in the client memo.

Candidates were expected to give a novelty analysis for both D1, including both embodiments, and D2, even though the Examiner did not raise a novelty objection based on D2 (though it was quite in order to say so in the response, and again if this was done in the client memo rather than in the letter this was acceptable). An analysis of the prior art cited in the application was not required.

Candidates are generally expected to use actual claim language (rather than summaries or restatements since it is the claim wording which is being analysed) to differentiate over the prior art.

- Inventive step

This has historically been the portion of the paper on which candidates struggle the most.

The preferred amendment to Claim 1 provides the principal advantage (which is indicative of the presence of inventive step) that escape of hot air from the oven is reduced, leading to lower running costs. The Examiners were looking for an appreciation that the intermittent drive was instrumental in achieving this advantage, since (as mentioned above) a continuously rotating platform would result in the baking chamber being unsealed for the vast majority of the time, which is clearly *disadvantageous*. Clearly, candidates who did not include the intermittent drive feature in their claim were not going to be able to make as compelling a case for the inventive step of the claim.

Two approaches are generally available – the UK Pozzoli/Windsurfer approach or the EPO problem solution approach.

Applying the Pozzoli/Windsurfer test, it would be reasonable to suppose that the skilled person was a designer or manufacturer of food ovens (possibly pizza ovens depending on the breadth of Claim 1), and that the standard linear conveyor belt oven acknowledged in the introduction of the client's patent application (introduced by 'it is known...') forms part of the Common General Knowledge ('CGK'). It was reasonable to suppose that D2 may be included in the CGK because it was disclosed in a trade publication, though it may be unhelpful to concede this to the Examiner. It was considered a stretch (and unhelpful) to concede that D1 was part of the CGK.

Relative to the prior art, candidates could point out that the claimed invention is advantageous compared to D1 because when the door in D1 is closed, the oven is difficult to operate and the cooking process is impeded, and when the door is open (or the housing is removed, as in the second embodiment) a lot of hot air escapes continuously. The difference between the inventive concept and D1 could be said to be non-obvious because D1 is directed to solving a different problem (achieving a high throughput of food through the oven) and suggests that this must be achieved by sacrificing efficiency (page 15, lines 15–16), thus discouraging the pursuit of improved efficiency. D1 also contains a clear teaching, contrary to the inventive concept, that the turntable must be ‘unobstructed’ (page 15, lines 1–4).

Relative to D2, the claimed invention has the advantage (again) of better heat efficiency, for example because because the entrance door of D1 will be open for a minute each time a pizza passes through. It could also be noted that the present invention would function better than the system of D2 because of problems installing an exit door in D2, arising from the poor reliability of photodetectors inside the oven cavity. It could also be noted that there would be a technical incompatibility when trying to mount dividing walls on the conveyor belt of D2, because the walls would be obstructed at the side, and beneath, the conveyor belt (aside from the more fundamental differences between the linear conveyor belt and the rotating platform).

Candidates may be given credit for considering the combination of D1 and D2 and (for example) noting the technical incompatibilities between the two, though this would normally only be appropriate if D2 (or D1) had been considered to be CGK (or if D2 was used as an example of a conventional linear conveyor belt oven if that was considered CGK, in which case it would be helpful to mention this somewhere).

As an aside, it seemed that some candidates had been steered away from including the intermittent drive feature in Claim 1 on account of the client’s mention of the off-the-shelf intermittent drive mechanism for food carousels. Certainly, it was considered that the intermittent drive feature and/or plurality of arcuate segments *per se* was not inventive in isolation; though it could be argued that the carousel drive was in a different technical field and served a different purpose, in isolation it provides no significant benefits when incorporated into an oven. However, there is a clear synergy between the features of the intermittent drive feature and the co-operating walls on the platform and oven housing, such that the combination of the constituent parts provides an advantage that is not provided by any of the parts in isolation.

Many candidates appeared unsure of the difference between the ‘inventive concept’ of the Pozzoli test and the European concept of the difference between the claimed invention and the closest prior art (they are not the same thing, though they may coincide). This is forgivable because in practice one would not normally provide a full analysis of this type, but in this paper providing a full (and correct) Pozzoli/Windsurfing analysis gives a candidate an opportunity to demonstrate to the Examiners that they understand the relevant principles under UK law as well as the specifics of the invention.

If adopting the problem solution approach, then candidates need to justify their selection of the closest prior art, the problem with that art, and the solution – identified in the claim wording. Given only two pieces of prior art, each could be taken in turn as the closest.

- Clarity/other issues

Candidates were also expected to request an extension of time for filing the response (two months as of right as per Section 117B, with no fee payable), and to request grant to be deferred if the application was in order to allow time for filing a divisional application.

Client memo

25% of marks were allocated to the client memo. As always, candidates were expected to provide an analysis of the new prior art, to comment on the Examiner's objections in the examination report, to give the attorney's own opinion (not just parroting the Examiner's view) on whether or not the claims required amendment, to provide a reasonable analysis of the options for amendment, and to provide an explanation of why a particular amendment was chosen, with particular reference to the client's commercial considerations.

A majority of candidates affirmed that the Examiner was correct to reject Claim 1 as lacking novelty over D1, but this was in fact incorrect. Though the oven of D1 may have been suitable for cooking pizzas (and therefore Claim 1 would at least be obvious in view of D1), D1 did not disclose a "pizza oven" *per se*. Had Claim 1 been directed to an oven "(suitable) for cooking pizzas" then this would have been a different matter. This issue was in the end academic as candidates were expected to broaden Claim 1 to cover food ovens more generally, but it was disappointing that this point was missed by so many.

A (non-exhaustive) list of additional points that could be covered in the memo includes:

- Possible clarity issues in Claim 1 (as originally filed or as amended)
- Possible clarity issues in many of the dependent claims (see "Dependent Claims" above)
- Possible clarity or added subject-matter problems with the divisional, in which case a discussion of possible fall-back positions may be helpful
- If the divisional was directed to a pizza oven with nozzles, noting that that infringement of the divisional by oven manufacturers was likely to be contributory rather than direct (depending on the wording). (Suing pizza parlours might be labour intensive and they are the client's potential customers.)

CLAIM 1 / DIVISIONAL (marks awarded regardless of whether it was presented as the main claim or the proposed divisional)

Ideal claim	<ul style="list-style-type: none"> • {Pizza} oven comprising platform, housing means ..., heating means ... drive means ..., and <u>sealing means cooperating with the housing means, for preventing the escape of hot air from the oven into the access area [=claim 4], wherein the platform is divided into a plurality of arcuate segments, the drive means is adapted to intermittently rotate the platform through an integral multiple of the arcuate extent of the segments [=claim 6], and the sealing means includes a plurality of dividing walls provided between each of the arcuate segments</u> [client app, first page, lines 16–19, similar to claim 5]. or • As above, but omitting positive recitation of driving intermittently, and instead reciting ‘<u>such that whenever the platform is rotated through an integral number of segments, the walls cooperate...</u>’ language from first page, lines 17–19 (inventive step is less defensible so will not gain marks for I/S and client memo section if this is not adequately acknowledged or dealt with), • Does not include extraneous elements
Good claim	<ul style="list-style-type: none"> • Ideal claim plus inessential limitations, or • Ideal claim but directed to <u>pizza</u> oven (if well-reasoned for maintaining as pizza oven), or • <u>Sealing means includes vertical walls between arcuate segments</u> but no intermittent drive feature or rotating through multiple of arcuate extent of segments (may be borderline with ‘Adequate claim’; must have clear novelty at least, i.e. walls must be attached to platform rather than location unspecified); or • Ideal claim sloppily drafted
Adequate claim	<ul style="list-style-type: none"> • Could move claim into bad category if candidate appears to have found amendment by accident (i.e. not well justified in letter / memo) • Significant (and unnecessary) rewrite of claim but claim nevertheless complies with novelty, inventive step and added matter requirements
Bad claim	<ul style="list-style-type: none"> • <u>Intermittent drive</u> feature without sealing means [i.e. just Claim 6] • Candidate has included several unrelated features that unduly narrow the claim (could move into terrible category if candidate does not put forward reasonable novelty/inventive step arguments)
Terrible claim	<ul style="list-style-type: none"> • No (significant) amendment to Claim 1 or other serious novelty issue • Clear added matter issue, especially if not addressed in response • Total rewrite of claim which fails on novelty, inventive step or added matter