

Introduction

The average mark and pass rate this year are much improved compared to recent years. It is also notable that there were fewer candidates achieving fewer than 30 marks. There were fewer incomplete answers with most candidates submitting answers for all parts of the question paper.

This year's question paper differed from more recent years in that the claims were solely to a method, and the subject matter was in the domain of materials and metallurgy. All of the necessary technical information was included in the patent and most candidates seemed to find this and use it properly in their answers. Most candidates appeared to understand the key technical points of the paper. They also appeared to identify the key aspects of the method, but some did not explain well how a particular apparatus relates to the method of use when considering infringement, especially where alternative uses of that apparatus might be possible.

The paper did not contain all the information needed to address all issues thoroughly. One of the objects is for candidates to identify any missing information and explain how it might affect the advice given. Candidates who speculated on missing information needed to clearly show that this was speculation and provide a basis for doing so. Marks are not available for unsupported conclusions.

Generally, construction, infringement, and novelty were reasonably answered. However, the answers for inventive step, sufficiency, amendment, and advice were often poor. 17 marks were available for sufficiency, amendment, and advice yet many candidates provided little discussion of these points. It is notable that many candidates achieved sufficient marks in construction, infringement, and novelty to compensate for indifferent performance in the rest of the paper. Conversely, a number of candidates who received marks in the high 40s failed to gain relatively easy marks in the latter part of the paper that could have taken them to a pass mark.

The fact pattern in the paper supported the following conclusions:

- Claim 1 was infringed by the Gastride Plus process and claims 4 and 5 were not.
- Claim 1 lacked novelty over Document C and claims 2, 3, 4, and 5 were novel.
- Claims 4 and 5 involved an inventive step.
- The patent is insufficient due to lack of enablement across the scope of the claim but a saving amendment may be possible.
- There is no saving amendment that provides novelty and inventive step and still covers the Gastride Plus process.

It was not necessary to present these conclusions to pass the paper. As with previous years, what matters most is that the answer shows how and why the candidate comes to a particular conclusion as much as what that conclusion is. Many candidates who achieved a pass mark came to different conclusions to those set out above. As long as these were

logically argued and applied consistently, these were awarded the same marks as would have been awarded for the conclusions listed above.

The client's letter indicated two potential sufficiency issues and asked specific questions. Candidates are expected to address such specific issues raised by the client explicitly and a number did not do so.

Construction

Most candidates presented reasonable constructions providing concrete limitations to the scope of the claims and relating this to the disclosure of the patent. Almost all candidates demonstrated that they understood and could apply the process for construing a claim.

Many candidates went to great lengths to discuss the limits of the ranges given in the claims, yet did not use their conclusions further in their answers. It was not necessary to look beyond the explicit values given in the patent to answer this paper.

Claim 1:

The principal challenge in construing claim 1 is to place some limits on the functional definitions of time and temperature in the claimed process.

While the patent described a two-stage process, the claim was not limited to this. The requirement for the nitrogen-containing gas meant that the claim needed to read onto at least the second stage of the described process. Few candidates noted this.

Claim 1 does not include any specific ranges of temperature or time. Therefore, it was not necessary to address the questions of the degree of accuracy of the limits of the ranges in the description.

Many candidates produced good constructions for claim 1.

Claim 2:

Most candidates noted that the scope of the claim ("no more than") included 900°C in the temperature range but few also noted that despite there being no stated lower limit, dependency on claim 1 means that the temperature needs to be sufficient to for carbonitriding so the range cannot be any temperature below 900 °C.

Claim 3:

Few candidates noted that the claim was closed ("is") with respect to the carbon-containing and nitrogen containing gases

Claim 4:

Most candidates noted that the upper limit on ammonia content of 11% means that the content of endothermic gas must be at least 89%. Few noted that there must always be sufficient ammonia to provide the nitrocarburizing effect so the lower limit cannot be 0%.

The word “balance” indicates that the treatment atmosphere contains only ammonia and endothermic gas, i.e. closed wording. Many answers did not comment on this.

Claim 5:

The two-stage process defined in claim 5 adds a first “carburing” step to the process of claim 1 with the introduction of the nitrogen-containing gas between the two steps to provide the treatment atmosphere of claim 1. Many candidates failed to mention the specific time periods noted for each stage in the description or that these could be up to 50% longer.

Some discussion of “about” 850 °C was expected. In most cases, it was sufficient to note that this just indicated that the temperature need not be exactly 850 °C. Some candidates attempted to provide more concrete limitations on a range of temperatures but there was little in the patent to justify this approach.

Infringement

Document B disclosed two processes: Gastride and Gastride Plus. Many candidates provided a detailed analysis of the Gastride process for all claims. However, this was not necessary. First, the Gastride process has no carbon-containing gas and so cannot infringe claim 1. Second, the Gastride process has been in use for over 10 years, i.e. before the patent. (This point could be addressed in Advice).

As in previous years, no marks were available for simply stating that a feature of the described process was within the scope of the claim.

Claim 1:

Few candidates were unable to read their construction of claim 1 onto the Gastride Plus process.

Claims 2, 3, and 4:

Few candidates found difficulty in deciding that these features were also present.

Claim 5:

While most candidates noted that the Gastride Plus process did not have the claimed features, some candidates lost marks by failing to address this in detail.

Few candidates noted that document B states that the Ferrocasse system allows complete control of gases and temperatures. This suggests that it may be possible for there to be non-infringing uses of the furnace.

Where a conclusion of no infringement was reached, it is appropriate to consider whether or not Actavis (equivalence) should be considered. Many candidates did not address this. Marks were available for explaining why Actavis was not applicable, or for an outline application of the test leading to no change in conclusion. Some candidates appear to confuse purposive construction (i.e. "normal" construction) with infringement by equivalence. No infringement under Actavis was expected for this paper.

The date on which the Gastride Plus process was developed and first used is not clear. This should have been addressed in the advice section in case there were any defences to infringement available to Ferrocasa.

Novelty

The question of novelty did not appear to pose a significant challenge for most candidates with several achieving more than 20 marks for his section.

As in previous years, the assessment of novelty involved analysis of a specific prior art document and of information included in the patent and client letter indicative of common general knowledge.

Many candidates did not state the date for assessing novelty. While this was not a key issue for Document C, it needed to be addressed if the Gastride process of Document B was being considered.

A number of candidates picked up on the fact that the Gastride process was described as being in use for over 10 years as indicating that it was prior art and should be analysed when considering novelty. None of the candidates who did so explained how the nitriding mode process described in document B qualified as part of the state of the art for consideration of novelty.

Document B itself was not published before the date of the patent. Nitriding mode is stated as corresponding to the standard Gastride process but there is nothing in Document B that provides a clear disclosure of what was known about the Gastride process before the date of the patent. At best, this suggests a line of enquiry that might be followed up later.

No marks were available for consideration of Gastride in relation to novelty because there is nothing in the question paper that provides sufficient detail of the Gastride process for such an analysis.

The introduction of the patent does provide details of gas carburization that form part of the common general knowledge and should have been analysed for novelty.

Most candidates who considered both Document C and the common general knowledge from the patent achieved good marks for novelty.

Claim 1:

Most candidates found that claim 1 lacks novelty over Document C but that there is no disclosure of a nitrogen-containing gas in CGK. In most cases, this was well answered.

Claim 2:

A significant number of candidates argued on the basis that the claim covered less than 900 °C, even where they had constructed the claim to include 900 °C. Most correctly noted that Document C did not have enough information to decide on this feature.

Claims 3 and 4:

Most candidates noted that the CGK does not mention ammonia and that Document C does not mention endothermic gas. Some candidates argued that endothermic gas was disclosed as it was known to be the most common carbon-containing gas but this is an inventive step argument, not novelty.

Claim 5:

Most candidates seemed to have no problem in finding this claim novel.

Many candidates noted that Ferrocane's development of the Gastride Plus process was close to the date of the patent. There is not enough information in the paper to come to a decision on this point but it is something that should be discussed in the advice section.

Inventive Step

Inventive step was not well analysed by many candidates. While most were able to set out the Pozzoli analysis in general terms, the answers for specific claims were not well presented. Candidates who presented good answers for inventive step tended to perform well overall.

Candidates seemed to struggle to define the inventive concept of a claim. In many cases, the breadth of the inventive concept did not match the breadth of the claim.

Some candidates presented EPO problem and solution style analyses. This is not the correct test in the UK and typically gains few marks.

As in previous years, candidates were expected to provide inventive step analyses of claims they found lacked novelty. At the very least, this should involve identification of the inventive concept and a discussion of the obviousness of the technical features underlying the invention.

Arguments and conclusions need to be supported by reference to the information provided in the question paper. Simple statements that something would or would not have been obvious without support did not gain any marks.

Claim 1:

Most candidates found this claim to lack novelty so only a simple analysis was needed. However, this needed to go beyond: not novel therefore not inventive.

Claim 2:

A number of candidates provided an analysis that was inconsistent with their construction, arguing that the claim was limited to less than 900°C despite noting that this temperature was included in the scope of the claim in their construction. Document C has a clear pointer to the use of lower temperatures.

Claim 3:

Most candidates recognised that the evidence in the paper showed that the use of endothermic gas would have been obvious.

Claim 4:

This claim was well analysed in many cases, with good arguments as to why an upper limit of 11% could be unobvious.

Claim 5:

Again, most candidates presented arguments supporting inventive step regarding a two-stage process. However, many failed to note that the two stages involved both a change of atmosphere and a change of temperature. The discussion of obviousness needed to consider what the prior art did say as well as what it did not to get all marks available.

Sufficiency

Marks were poor for Sufficiency.

Few candidates provided acceptable analysis of the sufficiency issues. The client's letter contained clear pointers to potential sufficiency issues. Candidates were expected to note that there were two issues to consider: that the invention would only work with the second stage being between 800 and 850°C; and that the time to reach the lower temperature varied according to the size of the workpiece.

The first point is a question of sufficiency across the scope of the claim ("Biogen" sufficiency). The claims are not limited to these temperatures so cover processes above and below this range which apparently do not work. This is potentially detrimental to the validity of the patent and can be addressed by amendment of the claim. Amending claim 1 and/or claim 5 to have a range of 800 - 850°C in the second stage is one option to deal with this. This could be addressed in the amendment section as well.

The second point is a question of reasonable trial and error ("relatively easy to determine with a few practical tests") and would not normally be detrimental to the validity of the patent and no amendment should be needed.

Some candidates did not comment at all on this aspect of the client's letter but simply presented speculative comments on sufficiency generally. This achieved few marks, if any. Marks were also awarded if sufficiency issues were discussed in the advice section.

Amendment

Few candidates proposed sensible amendments to improve the client's position in any way.

While there was no amendment expected that could provide novelty, inventive step, and infringement, candidates were expected to identify any amendments that would improve the validity of the patent. This could be an amendment to cancel the invalid claims.

Amendment would also be useful to address the Biogen sufficiency issue and a suggestion to introduce a temperature range in claim 1 and/or amend the temperature range in claim 5 based on the disclosure of a range of 800 - 915°C and a temperature of about 850°C in the patent.

A detailed analysis of the amendment and its justification was not needed as long as the main features were identified.

Advice

Few candidates provided anything but superficial advice to the client. Ultimately, the problem presented in this paper is one of advice for a client. While credit is given for the work underlying the advice, it is the advice itself that is important to the client. In most cases, the advice appeared to be an afterthought and gained few marks.

The client asked specific questions about how to stop Ferrocasa offering its process and an outline of the procedure for enforcing the patent. Few candidates attempted either.

The outline of the options for enforcing the patent did not need any consideration of the validity or infringement of the patent and should have been relatively straightforward.

One particular challenge for the advice section was to explain that the claim could not validly cover the Ferrocasa process and that there was no saving amendment. Given the problems with validity, it was expected that any advice would explain these in terms a client could understand.

There were also issues of possible defences to infringement. The paper did not include all of the information to advise on these, so it was expected that the advice should outline any further information needed, such as when Ferrocasa actually developed the Gastride Plus process in case this pre-dated the patent, and if so, was there any public use.

A number of candidates advised seeking interim relief despite also advising that the patent was invalid. This could put the client in a worse position than doing nothing.

Examiner's Report 2022
FD4 – Infringement and Validity

Likewise, suggesting not amending before trying to enforce could also prejudice the client's position.

Overall, the advice part of the paper was not well handled.