



Neutral Citation Number: [2022] EWHC 1666 (Pat)

Claim No. HP-2020-000024

IN THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
INTELLECTUAL PROPERTY LIST (ChD)
PATENTS COURT

The Rolls Building
7 Rolls Buildings
Fetter Lane
London EC4A 1NL

28th June 2022

Before:

MICHAEL TAPPIN QC
(sitting as a Deputy Judge of the High Court)

Between:

SAINT-GOBAIN ADFORS S.A.S
(a company existing under the laws of France)

Claimant

- and -

3M INNOVATIVE PROPERTIES COMPANY
(a company existing under the laws of Delaware, United States)

Defendant

JAMES ABRAHAMS QC and MICHAEL CONWAY (instructed by Powell Gilbert LLP)
appeared for the Claimant

MICHAEL HICKS and NICHOLAS ZWECK (instructed by Wiggin LLP) appeared for the
Defendant

Approved Judgment

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MR MICHAEL TAPPIN QC :

1. Following the trial of this claim between 30th March and 5th April 2022, I gave judgment on 9th May, with neutral citation [2022] EWHC 1018 (Pat). I will refer to that as my trial judgment.
2. I held European Patent (UK) 2 373 755 (“the Patent”) to be invalid for insufficiency on the ground that it would have required an undue burden for the skilled person to produce particles across the claimed range.
3. The hearing to determine the form of order to be made as a consequence of my trial judgment was arranged for today, 28th June. It was not possible to find a date within 28 days of judgment being handed down that was convenient to all concerned.
4. On 1st June, the Defendant (“3M”) issued an application seeking permission to amend claim 1 of the Patent in the event that permission to appeal was not granted or any appeal was dismissed.
5. 3M asked for its application to be listed at this hearing. The Claimant (“SG”) resisted on the basis that it would not be ready to deal with it. Further, the application to amend has not yet been advertised, so third parties could yet oppose the application. However, I directed that the application should be listed for this hearing, for disposal, if that were possible, or for further directions if it was not. Apart from anything else, if 3M's application were to be allowed, that would be likely to have consequences for the arguments about costs and permission to appeal that were due to be heard at this hearing.
6. In *Nikken Kosakusho Works v Pioneer Trading Company* [2005] EWCA Civ 906 the Court of Appeal had to address an application to amend made by a patentee after trial. Jacob LJ identified three situations: (a) where the application to amend is made before trial; (b) where the application to amend is made after trial, but only to delete claims which have been held invalid, including so as to eliminate dependencies; and (c) after a trial in a case where all claims have been held invalid, but the patentee wishes to insert what it hopes are validating amendments. At [11] Jacob LJ said:

"Class (c) involves something different, a proposed claim which was not under attack and could not have been under attack prior to trial. If the court is to allow such a claim to be propounded after trial, there is almost bound to be a further battle which would arise in the proposed amendment proceedings. That battle will be over whether or not the proposed amended claim is valid. I say 'almost bound' because I can just conceive a case where the point was covered by the main litigation in some way or other."
7. He went on to say that where the proposed amendment would give rise to such a further battle, it would be improper to allow that to take place, referring to the principles of *Henderson v Henderson*, to the principle that the parties must bring before the court the issues that they seek to have resolved so as to enable the court to conclude the litigation between the parties and to the overriding objective in the CPR. Laws LJ agreed saying that in any litigation the parties are required to bring forward their whole case. Waller LJ added that patent litigation was no different from any other; in all cases it would be

unfair to allow a party to amend his case post-judgment so as to allow an opportunity to succeed after a further trial, however small.

8. In *Nokia Corp v ICom GmbH & Co KG* [2011] EWCA Civ 6 the Court of Appeal reconsidered what it had said in *Nikken* in the light of *Johnson v Gore-Wood*, and in particular the well-known statements of the law by Lord Bingham and Lord Millett, which I have well in mind. The Court of Appeal held that there was no inconsistency between that case and *Nikken*. At [108] Jacob LJ said:

"I accept entirely that the true test is one of abuse of process - procedural fairness - and that the burden lies on the party objecting to the second action to show this. However, where a party fails to advance a case he could have advanced much earlier and does so without any real justification, he is abusing the process and the other party is therefore entitled to object. It is not normally procedurally fair to subject the other side to successive cases when you could have readily put them all in one go."

9. In *Warner-Lambert Co LLC v Generics (UK) Ltd* [2018] UKSC 56 at [107]-[120] Lord Briggs, with whom the other members of the Supreme Court all agreed on this point, rejected an invitation to depart from the approach set out by the Court of Appeal in *Nikken* and *Nokia* and upheld the distinction drawn between amendments to delete claims that have been held to be invalid and amendments designed to make good a claim not thus far advanced in the amended form.
10. Claim 1 of the Patent is set out in [93] of my trial judgment. For present purposes the important point is that integer (6) requires the thickness ratio (Tc/Ti) of the dish-shaped abrasive particles to be between 1.25 and 5.00.
11. I should add that the description of the Patent mentions ranges with a thickness ratio which are narrower than that in claim 1. Paragraph [0021], referred to in my trial judgment at [66], refers to ranges of 1.25-5.00, 1.30-4.00 and 1.30-3.00, while paragraph [0022], referred to in my trial judgment at [68], states:

"Triangular dish-shaped abrasive particles produced by the invention have been measured to have thickness ratios between 1.55 to 2.32 in some embodiments."
12. 3M's application seeks permission to amend the claim so that integer (6) requires the thickness ratio to be between 1.25 and 2.32 or, if that is refused, between 1.55 and 2.32.
13. In my judgment, these proposed amendments are clearly ones which, in the words of Jacob LJ in *Nikken*, were not under attack and could not have been under attack prior to trial, or, to use the words of Lord Briggs in *Warner-Lambert*, are designed to make good a claim not thus far advanced in the amended form.
14. 3M contends that this is a case of the type of which Jacob LJ was just able to conceive, namely one which was covered by the main litigation in some way. It says that in my trial judgment I have decided that the claim as proposed to be amended is valid, and so

no further trial is needed. Therefore, 3M says, there can be no abuse of process, and there is no reason to refuse to grant permission to make the amendments.

15. In order to address that point, it is necessary to identify what was in issue at trial. SG's pleaded case of insufficiency due to undue burden was, so far as relevant, as follows:

"The description gives no or no adequate information enabling the skilled reader to implement the invention so as to reliably obtain products either within the claim or across the scope of the claims. In particular, there is no indication in the examples of preparation of abrasive products as to what thickness ratio was achieved, let alone how to vary that thickness ratio so as to be able to perform the invention across the breadth of the claims."

16. That case as developed in argument had, as I said in [198] of my trial judgment, two aspects. The first was an argument that the skilled person was faced with an undue burden to produce anything within the claims. I addressed that argument at [199]-[209] of my trial judgment and concluded that SG had failed to establish that case on the evidence.

17. The second was an argument that the skilled person could not, without undue burden, produce particles across the scope of the range of thickness ratios in the claims. In order to succeed on that second limb of its argument, SG only needed to show that a substantial part of the range could not be achieved without undue burden. No doubt because paragraph [0022] of the Patent reported that thickness ratios of between 1.55 and 2.32 had been achieved, the evidence and argument focused in particular on the upper end of the range. I accepted that argument on the evidence for the reasons set out in [211]-[233] of my trial judgment.

18. As I have said, 3M's position is that my trial judgment establishes that the Patent as proposed to be amended is valid. More specifically, Aleksander Medved, the assistant chief IP counsel of 3M, puts it this way in paragraph 5 of his statement:

"The Judgment concludes that it would not require an undue burden to make particles in the claim: see paragraph 209 of the Judgment. However, the Judgment also holds that the skilled person would not, without undue burden, be able to make dish-shaped abrasive particles with an average Tc/Ti ratio towards the upper end of the range claimed (i.e., approaching 5.00) and was insufficient in that regard: see paragraphs 211 and 233 of the Judgment. Accordingly, in the light of the conclusions reached in the Judgment, a skilled person would, without undue burden, be able to make dish-shaped abrasive particles with an average Tc/Ti ratio in the lower end of the range."

19. As I understand it, the suggestion by 3M is, and indeed needs to be, that in my trial judgment I found that the skilled person would, without undue burden, be able to make particles across the scope of the proposed amended claims.

20. In the section of my trial judgment leading up to [209], I was addressing SG's case that undue burden was needed to produce anything within the claims. The fact that I rejected

that case does not mean that I was holding that the skilled person was able, without undue burden, to produce particles across any particular range of thickness ratios. It was not necessary for me to address that question when considering the first limb of SG's case, and I did not do so.

21. Similarly, my finding on the second limb of SG's case was that the skilled person would not, without undue burden, have been able to produce particles with a thickness ratio towards the upper end of the range claimed. That does not imply that I found that the skilled person would have been able, without undue burden, to produce particles across some other range. Again, it was not necessary for me to address that question, and I did not do so.
22. 3M relies in particular on what I said in [211] of my trial judgment. Having dealt with the first limb of SG's case, I introduced the second limb by saying:

"In my judgment the position is different when it comes to consider whether the skilled person could make particles across the breadth of the claims without undue burden. The Patent indicates in [0022] that 'triangular dish-shaped particles produced by the invention have been measured to have thickness ratios between 1.55 to 2.32 in some embodiments.' While it is clear from the Patent that it is possible to make dish-shaped particles with such average Tc/Ti ratios using example 1, by contrast there is no indication that it has been possible to make dish-shaped particles with average Tc/Ti ratios above 2.32, and in particular with ratios towards the upper end of the range claimed (i.e. approaching 5.00). However, for reasons I have explained, in order for the claims to be valid, the Patent needs to enable the skilled person to make such dish-shaped particles."
23. In that paragraph, I recorded the fact that the Patent reported that particles with thickness ratios between 1.55 and 2.32 had been produced and contrasted that with the position for particles with higher thickness ratios. However, I was not holding that the skilled person could produce particles across the scope of that range without undue burden. That was not an issue for decision at the trial.
24. Therefore, I do not agree that my judgment establishes that the Patent, as proposed to be amended, is valid. The question of whether a claim limited to particles with a thickness ratio of 1.25-2.32 or 1.55-2.32 would be invalid for insufficiency was not in issue at the trial and has not been decided. Another trial would be required to decide that issue. Mr Abrahams also suggested that an added matter point would be raised. It may be that the trial would be a relatively short one, and that SG could be compensated in costs, but that was also the case in *Nikken*.
25. As I have said, the allegation that the Patent did not enable the skilled person to produce particles across the scope of the claims was pleaded by SG from the outset. SG drew my attention to the fact that, on 1st September 2021, 3M stated that it currently did not intend to amend the claims of the Patent but reserved the right to do so once SG's case had been clarified in its expert report.

26. Prof Atkinson's first report was served on 22nd October 2021 and the written evidence evolved thereafter as summarised in [212]-[216] of my judgment. In my view it was clear, at least from the date of service of Prof Atkinson's first report, that SG's case included an allegation that the Patent did not enable the skilled person to make particles with thickness ratios across the range 1.25-5.00. 3M could have applied to amend the Patent at any time, and in my view it should have done so before trial if it wanted to contend that the claims would be valid in an amended form if they were invalid as granted.
27. 3M contended that if the application had been made sooner, that would have raised procedural objections. That may be so. The nature and scale of those objections would have depended on when the application to amend was made. In any event, the court could have then considered the matter and given appropriate case management directions.
28. Mr Abrahams invited me to infer that 3M made a deliberate decision not to apply to make these amendments before trial, and he commented on the absence of evidence from 3M on this topic, despite the gauntlet have been firmly thrown down. It is tempting to conclude that Mr Abrahams must be right about this point, but ultimately it seems to me that it does not really matter. The point is that the application to amend was not made, and has only been made after judgment.
29. Mr Wilson, the solicitor with conduct of this case for SG, says in his fourth witness statement that SG decided what evidence and arguments to lead at trial, and what topics to cross-examine on, based on the positions taken by the parties in their pleadings and evidence. He says that SG's legal team took the decision to focus primarily on the ability of the skilled person to achieve a Tc/Ti ratio towards the top end of the range in claim 1, because that provided the clearest demonstration of the point. He adds that it was not necessary to explore or provide evidence about what Tc/Ti ratio the skilled person could achieve if they managed to put example 1 into practice. He says that SG's approach to the evidence and arguments would have been different if 3M had made the application to amend before trial, and that further expert evidence would be needed if 3M was allowed to proceed with its application to amend.
30. I accept that evidence. It is plain, in my view, that 3M could and should have made this application before trial, if it was to be made at all, and that allowing it to do so now would be prejudicial and unfair to SG, vexing it twice, and would be an abuse of the process of the court.
31. For these reasons, I refuse 3M's application.
32. However, I should add that even if I decided that 3M was right, and that my trial judgment happened to contain a finding that the skilled person could, without undue burden, produce particles with thickness ratios across the range of 1.25-2.32, or the range 1.55-2.32, in my judgment it would still have been an abuse of process to apply to amend the Patent after judgment. The purposes behind the requirement that a party should bring forward its whole case for adjudication include giving the opposing party notice of the case that it needs to address and the court notice of the issues that it needs to decide. Indeed, it is notable that in the *Warner-Lambert* case the application to amend after judgment was held to be an abuse of process even in circumstances where

Arnold J had held at trial that, if the claim had been construed to have the scope of the proposed amended claim, it would have been valid.

33. In present case, SG had no notice that 3M would seek to contend that the skilled person could, without undue burden, make particles across the range of the proposed claims, even if they were not able to do so across the range of claim 1, and so it had no reason to address that issue in evidence. Similarly, the court had no notice of such contention, and any finding to the court by that effect could only have been adventitious, as well as not being based properly on argument and evidence from the parties.

[Further argument]

34. I now have to decide on the appropriate costs order to be made consequential on my trial judgment. There was no dispute as to the approach to be taken.
35. First, I should consider who has won, as to which there is no doubt now that 3M's application has been struck out. The starting point is that SG should recover its costs.
36. Secondly, I should consider whether an issue-based costs order is merited, because while SG has won, it lost on issues which are suitably circumscribed.
37. Thirdly, I should consider whether on any of those issues it would be appropriate in the circumstances to order that SG should not only be deprived of its costs, but should also pay 3M's costs.
38. The parties were far apart as to the appropriate costs order. SG suggested that even though it won on only one of the six grounds of invalidity which it advanced, no issue-based costs order should be made, and it should recover 100% of its costs. Its fall-back position was that any deduction should not exceed 22.4%.
39. 3M said that were a number of issues on which it should not pay SG's costs, amounting to a 54.9% deduction, and that on some of those issues SG should pay its costs, amounting to a further 21.2% deduction, taking the total deduction to 76.1%.
40. Once I have addressed the specifics, I shall have to come back to consider whether the figure I have reached reflects the overall justice of the case, but in my judgment neither an award of 100% of SG's costs nor an award of 23.9% of SG's costs would do so.
41. I shall start by considering which issues, if any, were ones on which SG lost and were sufficiently circumscribed to merit a deduction from SG's costs. 3M sought a deduction for the following.
42. First, the CGK relating to abrasive products and abrasive particles. 3M did not suggest that this, in itself, was an issue, but said that it could be attributed solely to issues on which SG lost. I do not agree. Normally, at least in the absence of some specific dispute, the parties' evidence on the CGK would be treated as part of the general costs, as it is necessary for the court to make findings on the issues in the case. Plainly, there needed to be evidence as to the CGK regarding abrasive products and abrasive particles, given the nature of the case. Further, there was no material dispute as to the CGK on abrasive products and abrasive particles. This does not merit a deduction.

43. Secondly, Rowenhorst. SG alleged that the Patent lacked novelty over Rowenhorst, alternatively was obvious over it, because implementing its teaching would inevitably or frequently produce something within the claims. It also alleged that it was obvious to make routine modifications to its teaching which would produce something within the claims. It failed on those attacks. (It also failed on the argument of lack of technical contribution over Rowenhorst, which did not require an examination of the teaching of Rowenhorst, and which I will consider separately next.)
44. SG say that these arguments on Rowenhorst acted as a squeeze with respect to insufficiency, noting that my trial judgment records that SG's case on undue burden started with evidence of Dr Schwabel given in the context of Rowenhorst. In my judgment a deduction for the costs of the arguments on Rowenhorst is justified, because they were suitably circumscribed. The interaction in the evidence was between the arguments on obvious modifications of Rowenhorst, which was only part of SG's case on Rowenhorst, as I have said, and the arguments on whether example 1 of the Patent could be implemented without undue burden to produce something within the claims. SG lost on both those arguments. Further, SG lost on its case of obvious modifications of Rowenhorst for a further independent reason, as I recorded in my trial judgment.
45. Thirdly, lack of technical contribution. SG lost on this but says that there should be no deduction, because it was intertwined with the issue of claim construction, and in particular the meaning of 'dish-shaped'. That is to treat claim construction as if it were a freestanding issue and, moreover, a freestanding issue on which SG won, whereas in the present case the questions of claim construction were all advanced with a view to one or more of the issues of validity that arose. The fact that a claim construction was adopted which may have contributed to SG failing in its case of lack of technical contribution does not mean that there should be no deduction.
46. Fourthly, uncertainty-type insufficiency. Again, SG says that even though it lost on this, there should be no deduction because the issue of uncertainty had a direct impact on the construction of the claims. It is correct that one of the two arguments on uncertainty-type insufficiency was rejected because I was able to construe the claims, but I do not see why this means there should be no deduction. SG advanced various arguments about the construction of the claims to try to persuade me that the claims were unconstructable or so uncertain as to give rise to insufficiency. In that it failed. Further, its second line of argument on uncertainty-type insufficiency failed.
47. Finally, I need to mention claim construction. As will be apparent from what I have already said, I do not regard this as a freestanding issue in itself, and I do not think 3M actually treated it as such in its submissions on costs. SG submitted that claim construction needed to be addressed in any case and should be treated as part of the general costs of the action. However, in many cases issues of claim construction are only raised because they underpin one or more of the issues in the case. That was the case here. Various points of claim construction were advanced, but most, if not all, of them were related to one of the issues I have referred to above. Indeed, it is notable that the issue on which SG won, namely undue burden to produce particles across the scope of the claims, did not depend on a question of claim construction. I do not believe a deduction for claim construction per se is warranted, but the cost of addressing claim construction related to the issues on which SG lost should go with the cost of those issues.

48. Therefore, in my judgment there should be deductions from SG's costs for the issues of Rowenhorst, lack of technical contribution and uncertainty-type insufficiency, and for the related questions of claim construction.
49. On the other hand, in my judgment there is nothing to justify me going further and awarding 3M its costs of those issues. 3M's arguments for such an order did not really identify any factor over and above those which justified deduction of SG's costs on the issues I have identified. The fact that SG lost on a number of issues does not, in itself, mean that it is appropriate to order SG to pay 3M's costs of any of those issues. Further, even on the issues where SG failed, there were a number of aspects where I rejected submissions made by 3M.
50. I therefore need to determine the percentage to be deducted from SG's costs. Ms Ashby, the solicitor with conduct of the case for 3M, produced an analysis of my judgment, the opening and closing arguments, the written evidence and the transcripts to come up with some average numbers. On her analysis, Rowenhorst accounts for 25.1% of the costs (or 25.3% if one includes fact evidence), lack of technical contribution 9.9%, uncertainty-type insufficiency 5.7% and claim construction 9.9%. One problem with such analysis is that the number of lines or paragraphs in any document is not a good proxy for the costs that the parties have spent on an issue, though the proportion of the expert reports is likely to be a better indicator than the proportion of the judgment. Further, weighting time spent at trial equally with time spent on expert reports is unlikely to be correct. Mr Wilson for SG says that the expert reports alone should be used as an indicator, which if Ms Ashby's paragraph counts are adopted would lead to 23% for Rowenhorst, 2.4% for lack of technical contribution and 5% for uncertainty-type insufficiency, while a fraction of the 11% devoted to the Patent would be attributable to claim construction.
51. I am going to allow a 24% deduction for Rowenhorst, which accords with Mr Wilson's paragraph counting of the expert reports. On lack of technical contribution, in my judgment neither 2.4%, which is based only on counting paragraphs in the experts' reports, nor 9.9%, which is skewed by the amount of time taken on it in submissions at trial, is an accurate reflection of the likely proportion of the costs attributable to this issue. Taking into account the fact that a small part of the debate on construction went to this issue, in my view the right deduction is 7%. On uncertainty-type insufficiency, the parties' numbers are closer together: 5.7% versus 5%. However, much of the debate about claim construction was tied up with this issue. For that reason, I am going to allow a deduction of 9%. Therefore I will make a deduction of 40% of SG's costs.
52. I now need to stand back and consider whether a 40% deduction reflects the overall justice of the case. I believe it does. SG won overall but ran a number of points that needlessly increased the costs of the proceedings. 3M asked me, as a cross-check, to consider what SG's costs of the proceedings would have been if SG had only run the points on which it succeeded at trial. That is a matter of speculation, but I rather suspect they would not have been that far from the percentage of SG's costs which I have awarded it.
53. SG invited me to apply that percentage of its costs only up to the end of trial and to award it 100% of its post-trial costs. I do not think that would be the right approach. I agree with 3M that the right approach is to order 3M to pay SG's costs of 3M's application dated 1st June, and that otherwise SG should recover 60% of its post-trial

costs. I might have been more sympathetic to SG's argument if it had been more realistic in its submissions about the proportion of costs that it should recover, given that the argument about costs has, apart from 3M's application, been the principal post-trial issue.

54. I now need to deal with the appropriate interim payment to be made. SG asks for an interim payment of 75% of its costs, while 3M said the interim payment should be no more than 60%. SG's total costs of these proceedings, up to the end of May, were £1,159,470. 3M's total costs, up to and including trial, were £972,367. 3M's counsels and experts' costs were significantly higher than those of SG, while SG's solicitors' costs were significantly higher than those of 3M, due to higher charge out rates rather than hours spent, it would appear. In my judgment the differences between the parties' respective costs are not such as to give rise to a significant concern about the reasonableness and proportionality of SG's costs. Nor are the sums out of the norm for a case of this nature. However, I recognise that it is likely that some of SG's costs would be disallowed on a detailed assessment. SG urged me to err on the side of generosity, given that it had incurred costs since 31st May. However, it did not provide me with any indication of the quantum of those costs.
55. I need to award a reasonable sum on account of costs, and believe that a reasonable sum would be slightly above two-thirds of the 60% of SG's costs up to 31st May remaining after deductions, which on my calculation comes to £695,682. So I will order a payment on account of £475,000.
56. I now also have to deal with 3M's application for permission to appeal against my trial judgment.
57. The first draft ground of appeal raises an argument that this is not a case in which it was necessary for the claim to be enabled across the range of thickness ratios claimed. I addressed this point in [196] of my trial judgment where I explained why the range of thickness ratios was clearly a range relevant in the *Regeneron* sense, to use the words of Birss LJ in *Illumina Cambridge*. 3M submits that the Court of Appeal may take a different view on that, but did not explain how the Court of Appeal could conclude that the thickness ratio was not a variable which significantly affects the value or utility of the product in achieving its relevant purpose. Indeed, 3M's draft grounds of appeal expressly state that the degree of technical effect conferred depends on the thickness ratio.
58. The second and third draft grounds of appeal contend that I should have held that the claim was enabled across its breadth because a skilled person could have produced particles with a thickness ratio at the upper end of the claim, using the teaching of paragraph [0038] of the Patent regarding biconcave particles and what is said to be its teaching regarding drying conditions, including by virtue of the cross-reference in paragraph [0074]. I addressed these matters in my judgment, in particular at [217]-[219] and, in the case of the cross-reference in paragraph [0074], from [220] onwards. In my view, these draft grounds of appeal invite the Court of Appeal to revisit the evidence with a view to making different findings of fact and do not raise any issues of principle.

59. In my view, 3M's draft grounds of appeal do not have a real prospect of success. If 3M wishes to have permission to appeal on those grounds, it will need to seek permission from the Court of Appeal.
60. Finally, 3M sought permission to appeal from my dismissal of its application to amend, though Mr Hicks did not advance any real grounds for such an appeal. I cannot see how an appeal could have any real prospect of success. Again, 3M will need to seek permission from the Court of Appeal.
