

ENGLAND AND WALES / JUDGMENT

Kohler Mira Limited v Norcros Group (Holdings) Limited

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ON APPEAL FROM THE HIGH COURT OF JUSTICE, BUSINESS AND PROPERTY COURTS OF
ENGLAND AND WALES, INTELLECTUAL PROPERTY LIST (ChD), INTELLECTUAL PROPERTY
ENTERPRISE COURT Her Honour Judge Melissa Clarke

[2024] EWHC 3247 (IPEC) Case No: CA-2025-000133 Royal Courts of Justice Strand, London, WC2A
2LL Date: 22 December 2025 Before : LADY JUSTICE ASPLIN LORD JUSTICE ARNOLD and
LADY JUSTICE FALK

- ----- Between : KOHLER MIRA LIMITED

- and - NORCROS GROUP (HOLDINGS) LIMITED

- -----

- ----- Claimant/ Respondent Defendant/ Appellant Brian Nicholson KC
and David Ivison (instructed by Shakespeare Martineau LLP) for the Appellant Douglas
Campbell KC and Thomas Lunt (instructed by Mills & Reeve LLP) for the Respondent
Hearing date : 16 December 2025

- ----- Approved Judgment This judgment was handed down remotely at
10.30am on 22 December 2025 by circulation to the parties or their representatives by e-mail
and by release to the National Archives. Judgment Approved by the court
for handing down. Mira v Triton Lord Justice Arnold:

Introduction

2. This is an appeal by the Defendant (“Triton”) against an order of HHJ Melissa Clarke sitting in the Intellectual Property Enterprise Court dated 9 January 2025 granting the Claimant (“Mira”) relief for infringement of United Kingdom Patent No. 2466504 entitled “Ablutionary installation” (“the Patent”) for the reasons given in her judgment dated 16 December 2024 [2024] EWHC 3247 (IPEC). As explained in more detail below, the invention described and claimed in the Patent has particular application in the field of electric (or, more accurately, instantaneously heated) showers, but most of the claims are not limited to showers. The filing date of the Patent is 24 December 2008 and there is no claim to priority. The skilled person 3. It is common ground that the Patent is addressed to an engineer

engaged in the design of showers. The expert witnesses 4. Mira called Keith Mills and Triton called Noel Murray as expert witnesses. The judge generally preferred the evidence of Mr Mills to that of Mr Murray for the reasons she explained at [16]-[34]. The common general knowledge 5. 6. The judge made findings as to the common general knowledge of the skilled person at [41]-[47] which I reproduce below in slightly edited form. There were different types of showers on the UK market. Mr Mills identified four different types, standard mixer, digital or electronic mixer, power (by which he meant pumped mixer) and electric or instantaneously heated showers, but made clear that the first three all fell into the mixer category, and electric showers fell into a “separate class”. Mr Murray also split the market into two main categories, mixer and electric showers. The experts agreed that single outlet electric showers were available on the market since the 1970s. They also agree that in relation to both mixer showers and electric showers, controlling shower temperature was, at a general level, a key goal. 7. In relation to mixer showers at the filing date:

- i) They had both hot water and cold water feeds and combined them in proportions which could be varied by the user to reach the desired temperature for showering. ii) The hot water feed could come from a combination boiler under high pressure or a hot water cylinder under low pressure. iii) The cold water feed could come under high pressure from the water mains or under low pressure from a header tank. Judgment Approved by the court for handing down. *Mira v Triton* iv) The hot water feed was typically supplied from such sources at a temperature in a range of 50-65oC (for a hot water cylinder) or 60-70oC (for a combination boiler), but this could vary, although it could not approach boiling temperatures.
- v) The cold water feed could also vary in temperature by about 20 oC depending on the season and weather. vi) The method of user variation of the temperature could be mechanical or digital (electronic). vii) If mechanical, they would typically be operated by the user rotating a knob or handle to adjust the ratio of water coming from each of the hot water and cold water inlets. viii) A simple mechanical mixer shower would not have a thermostat, and so if, in use, the water pressure or temperature of either or both of the hot water or cold water inlet changed, the temperature of the mixed water would vary. ix) There were also mechanical mixer showers on the market which contained a thermostat, intended to maintain a more stable temperature of the mixed water in use.
- x) Digital (electronic) mixer showers would be operated by the user controlling an electronic valve by selecting a desired temperature on an electronic control panel which drives the valve by an electric motor. Commonly these would have sensors which monitored the temperature and flow rate of the inlets and/or outlet, and adjust the valve in response to any fluctuations in the inlet feed, to maintain a stable outlet temperature (and sometimes flow) as selected by the user. There were relatively few digital mixer showers on the market. xi) There were power showers which incorporated an electrical pump downstream of the mixer valve, to pressurise the water after it has been mixed, into either a mechanical mixer shower or a digital mixer shower. These were typically marketed as their own class of showers to the

UK Market, but nevertheless were a class of mixer showers. xii) Dual-outlet mixer showers were commonly available on the market in the UK. xiii) At least some of the diverter valves incorporated into mainstream mixer shower products would have affected the flow rate during changeover. 8. In respect of electric showers at the filing date:

- i) These only had a cold water feed. ii) The feed was typically a high pressure supply from mains water, but some electric showers used a low pressure supply from e.g. a header tank and contained a pump to pressurise the water. iii) The main components were an instantaneous water heater, an inlet solenoid valve, a flow stabilisation valve which was present in the vast majority of Judgment Approved by the court for handing down. *Mira v Triton* electric showers, a thermal cut-out, and the outlet which was typically a hose and spray head. iv) The instantaneous water heater typically comprised insulated resistive electric heating elements (with a typical power rating of around 8.5-10.5kW shared, typically, between two elements) which the cold water passes over and becomes heated.
- v) The elements of the heater are heated to a temperature well above the boiling point of water, typically in excess of 200oC. vi) The user would typically vary the output water temperature by operating a knob which set whether one or both heating elements was energised, and this would vary the temperature to which the water is heated. vii) The solenoid valve was used to switch the supply of water to the device on or off. When powered up, the solenoid would become energised and cause the valve to open, allowing water to flow through the device. viii) Any flow stabilisation valve would be located upstream and towards the cold-water inlet. This typically comprised an O-ring regulator which would expand under pressure and reduce the effective size of the inlet pipe, constricting and reducing the water flow (and vice versa). The purpose was to maintain a roughly constant water flow into the electric shower, even if, for example, water pressure reduced because of a tap or other water-drawing device being switched on in the house. ix) The flow stabilisation valve also enabled the user to adjust the outlet temperature because the O-ring regulator could be tightened or loosened by use of a knob on the external housing of the shower.
- x) The thermal cut-out device was an electromechanical device which would cut the power in response to temperatures exceeding a pre-defined threshold. Some would have an automatic reset, which would reconnect the circuit when the temperature decreased, or the shower was turned off. Some would have a second stage cut-out where if temperatures exceeded a second, higher, threshold the device would deform beyond recovery, and the shower would become non-functional until an engineer replaced the thermal cut-out device within the electric shower. The first threshold would be set at or about the comfort level for the user and align with current safety standards (around 55oC). The second threshold would be far above scalding temperature, at 80 oC or above. xi) On the UK market, electric showers only had a single outlet. xii) Handheld shower heads with stop-start buttons that could entirely stop flow were sold on the UK market in 2008. At that time they were probably sold without appropriate warnings on them that they should not be used with electric showers. Judgment Approved by the court for handing down. *Mira v Triton* 9. The experts agreed that there

were (and remain) three main factors affecting the outlet temperature of an electric shower:

- i) the inlet temperature, which may vary significantly (10-15oC) between summer and winter, which will vary the amount of heating required to achieve the same desired outlet temperature; ii) the power of the heater; and 10. 11. iii) the flow rate of water over the heating elements, controlled by the user via the flow stabilisation valve. The link between flow rate and temperature had been widely appreciated for as long as electric showers had been in mainstream use. The experts also agreed that it was within the common general knowledge that a reduction in water flow rate could be undesirable and this could be caused by a blocked outlet or a kinked hose. The judge found that the skilled addressee would know that there was a particular issue with reducing flow rate in electric showers because of the concern about elevation of temperatures arising from such reduction. 12. In relation to shower design, the experts agreed that at the filing date:
 - i) The first step for the shower engineer would be receipt of a brief from the marketing department, identifying the specification and features of the product wanted, which would then be turned into a technical brief by the engineering team, identifying the technical features which were required to meet the marketing specification. ii) Typically there would be a discussion between the marketing and engineering teams to agree the brief, after which the design phase would follow. iii) The device would be designed in the knowledge that it would have to comply with applicable safety standards, which for electric showers were set out in BS EN 60335-2-35 “Household and similar electrical appliances - Safety - Part 2- 35: Particular requirements for instantaneous water heaters”, which was a supplement to BS EN 60335-1 “Household and similar electrical appliances: Safety Part 1: general requirements”, and the skilled person would be familiar with these safety standards, as updated and amended from time to time. 13. The judge accepted Mr Mills’ evidence that at the filing date the design of mixer showers and the design of electric showers were treated as practically distinct, because the two types of products operate in different ways using different sorts of components that give rise to different design considerations. His evidence was that in putting a prototype design together, the skilled person would look at pre-existing showers and, where possible, at least for the prototype, see if they can use pre-existing parts and solutions, but core components of mixer showers and electric showers were different and cannot generally be transferred between the two contexts. Mr Mills said that there was a “different mindset” for each of electrical and mixer showers. Judgment Approved by the court for handing down. *Mira v Triton The Patent* 14. The specification is a short document, and therefore it is simpler to quote the key passages in full rather than to attempt to summarise them. 15. The specification begins by saying (page 1 line 3 – page 2 line 15): “This invention relates to ablutionary installations for washing and more especially to ablutionary installations for showering. The invention has particular application to shower installations employing an instantaneous water heater to provide a source of hot water on demand. In the known shower installations employing an instantaneous water heater, a supply of cold water is heated at the time of use by passage through a heater tank, typically by means of one or more electric heating elements positioned within the tank so that the

water flows over the heating elements as it passes through the tank. As the water is heated while it flows through the tank, the increase in temperature between the inlet and outlet is dependent on the flow rate and power input. For a given power input, varying the flow rate alters the outlet water temperature and enables the user to select the desired outlet water temperature. Maintaining the required flow for a selected water temperature while the heating elements are energised is desirable to avoid any sudden unexpected change in temperature, especially an increase in temperature that may give rise to a risk of scalding. It is also desirable to avoid an interruption to the flow while the heating elements are energised as this may result in a rapid increase in temperature of the water in the tank which may vaporise to steam giving rise to a risk of the tank rupturing to release the steam with a consequential risk of scalding. For these reasons at least, the known shower installations employing an instantaneous water heater typically employ an uninterrupted flowpath from the outlet of the heater tank to the spray outlet so as to avoid, as far as possible, any blockage that may reduce or interrupt the flow of hot water through the heater tank. The spray outlet employed is usually in the form of a handset connected to the outlet from the heater tank by a flexible hose. ... The present invention has been made from a consideration of the foregoing and seeks to provide an instantaneous water heater and a shower installation employing an instantaneous water heater that mitigates some of the disadvantages above- mentioned.” Judgment Approved by the court for handing down. *Mira v Triton* 16. After a series of consistory clauses corresponding to the claims, the specification describes a specific embodiment of the invention by reference to four figures. The specific embodiment is an electric shower with a water heater 2, a handset 4 and a fixed showerhead 6. The user can select either the handset or the fixed showerhead by means of a diverter valve 8. Most of the details of the specific embodiment do not matter for present purposes, but the specification says this about the diverter valve (page 10 lines 14-29): “The diverter valve 8 is preferably configured so that during the changeover from the handset 4 to the showerhead 6 or vice versa the flow to one outlet gradually reduces as the flow to the other outlet gradually increases. In this way, the diverter valve 8 cannot be positioned to prevent water flow and changing over from one outlet to the other can be achieved without any significant reduction in flow. As a result, if the diverter valve 8 is operated to select a different outlet while the shower is in use, the water flow is maintained to prevent a sudden, unexpected increase in temperature of water delivered from the water heater 2 which could otherwise occur if the water flow was reduced or temporarily interrupted during the changeover. Also, maintaining the flow prevents water in the heater tank being rapidly heated and changing to steam causing a sudden increase in pressure sufficient to rupture the heater tank which could otherwise occur if the water flow was interrupted. In this way, the risk of a user being scalded by discharge of hot water from a spray fitting or escape of steam from a ruptured heater tank 2 is reduced.” 17. The specification contains no further detail of the design of the diverter valve. The claims 18. The only claims in issue are claims 1, 4 and 17. Mira alleges infringement of claims 1 and 4, and contends that claims 4 and 17 are valid independently of claim 1. It is also relevant to note claim 19. 19. At trial the parties agreed the following breakdown of claim 1: “[a] An instantaneous water heater having [b] [c]

[d] a heater tank to heat water flowing through the tank, and a diverter valve downstream of the heater tank to select at least one outlet from at least two outlets and direct water from the heater tank to the selected at least one outlet, wherein the diverter valve is configured so that flow rate is substantially unchanged during changeover from one or more selected outlets to another selected one or more outlets.” 20. Claim 4 is as follows: Judgment Approved by the court for handing down. *Mira v Triton* “An instantaneous water heater according to any preceding claim wherein the diverter valve cannot be positioned to prevent water flow.” 21. Claim 17 is as follows: “An instantaneous water heater according to claim 1 wherein there are more than two outlets with the diverter valve directing water to each outlet individually or to a combination of two or more outlets simultaneously.” 22. Claim 19 is as follows: “An ablutionary shower installation provided with an instantaneous water heater according to any of the preceding claims.” Triton’s products

23. Mira contends that Triton’s DuElec range of showers infringe the Patent. The judge described these in a passage at [137]-[148] which I reproduce below in abbreviated and slightly re-arranged form. 24. The showers in this range are all electric showers with an instantaneous electric water heater and two spray heads: one fixed, overhead “rainfall” showerhead and one moveable handheld shower attachment, fed by a flexible hose, which can also be “parked” in a holder. They all have a diverter valve which the user can operate to switch the flow of warm water between these two spray heads. In ordinary use only one spray head will output water, although it is possible to adjust the diverter valve such that some water comes out of both spray heads simultaneously. 25. The showers in the DuElec range also all have:
 - i) A flow stabilisation valve. In some of the showers within the DuElec Range this is a mechanical valve which automatically regulates the flow rate of water entering the water heater in response to changes in water pressure, to keep the flow of water constant in the system. In others, this is an electronic system rather than a mechanical valve, which monitors the water temperature and pressure and dynamically adjusts the flow rate to maintain a steady showering temperature. ii) A thermal cutoff, which measures the temperature of the heated water and cuts off the electricity supply to the instantaneous water heater if it rises too high. 26. Certain showers in the DuElec range have an electronic thermostatic control system, which comprises a combination of electronic components and sensors which monitor and actively control water flow rate and temperature. The user sets a showering temperature between 32oC and 46oC using a controller interface, and the electronic thermostatic control system maintains this by continuously monitoring the water temperature and flow rate (including during changeover from one outlet to the other Judgment Approved by the court for handing down. *Mira v Triton* by user operation of the diverter valve), and adjusting the flow stabilisation valve to control the flow rate through the heater by use of a motor drive. 27. The diverter valve used in the DuElec range is illustrated below. 28. Directly under the outlet ports is a partial circular flap which pivots on a central axis to block the ports as the user rotates the handle of the diverter valve to divert flow from one outlet to the other. The following diagram illustrates the interaction between the flap

and the ports as this is done. 29. 30. Because of the shape of the ports and the flap there is not a linear and gradual progression from port A being open to port B being open, with the same cross-sectional area of the outlet ports being open at all times (whether port A or port B or both combined, in part). Instead, the combined cross-sectional area of the open outlets varies significantly during changeover, so that at one point it is only about a third of the area of a fully open outlet port. The judge accepted Mr Mills' evidence that, even where the open aperture was at its minimum cross-sectional area, that would not affect the flow, if that was the same as or larger than the minimum aperture somewhere else in the flow path within the installation. In that case, the reducing cross-section while the diverter valve is being operated to divert the outlet flow from one outlet to the other would not have any impact on flow. The minimum aperture elsewhere in the system could be in the exit of the heater can, in the flow stabilisation valve or anywhere upstream of the diverter valve. Mr Mills noted that in Triton's DuElec range marketing literature Triton acknowledged that the temperature stayed unchanged during changeover. That being so, he considered that the diverter valve had been designed in combination with the other elements of the system to achieve that end. Judgment Approved by the court for handing down. *Mira v Triton*

31. Mr Murray accepted in cross-examination that the DuElec range dual-outlet electric showers "seamlessly divert from one outlet to the other", a feature claimed in Triton's marketing literature. Mr Murray also accepted that the flow stabilisation valve generally determines the rate of flow at the narrowest point, and even if the diverter valve does change the water pressure, the flow stabilisation valve would compensate for that change up to normal parameters, and he had no reason to suppose that the DuElec range showers did go outside normal operating parameters. Finally, Mr Murray accepted that, if "substantially unchanged" was construed with reference to the risk of scalding criterion discussed below, a diverter valve alone and a diverter valve together with a flow stabilisation valve were merely two different ways of achieving the same result. 32. 33. Triton does not dispute that the instantaneous water heaters in the DuElec range all satisfy the requirements of integers [a]-[c] of claim 1, but disputes that integer [d] is satisfied. Triton accepts that, if claim 1 is infringed, then so too is claim 4. Triton admitted that each of the showers in the DuElec range was configured "so that when water is flowing at a selected water temperature while the heating elements are energised, any increase in temperature during changeover from one or more selected outlets to another selected one or more outlets does not give rise to a risk of scalding". The judge's judgment in outline 34. In summary, the judge held as follows: (1) (2) (3) (4) (5) She accepted Mira's construction of integer [d] of claim 1 discussed below. On that basis she held that Triton's DuElec range of showers infringed claims 1 and 4. She rejected Triton's arguments that the claims were insufficient either because they were uncertain or because of excessive claim breadth. She rejected Triton's case that the claims were lacking in novelty, alternatively obvious, in the light of an item of prior art referred to as Deeley. She rejected Triton's case that the claims were obvious in the light of common general knowledge. Grounds of appeal 35. Triton appeals with permission granted by myself on six grounds. Grounds 1 and 2 are that the judge misconstrued claim 1. Ground 3 is that,

on the correct interpretation of claim 1, Triton's products in issue do not infringe the Patent. Ground 4 is that all of the claims of the Patent are invalid for uncertainty. Ground 5 is that, on the judge's construction of claim 1, all the claims of the Patent are invalid for excessive claim breadth. Ground 6 is that the judge should have held that all of the claims of the Patent were obvious over common general knowledge.

36. Mira contends by a respondent's notice that, if claim 1 is not infringed upon its normal interpretation, it is nevertheless infringed by virtue of the doctrine of equivalents. Judgment Approved by the court for handing down. *Mira v Triton* Grounds 1 and 2: interpretation of integer [d] of claim 1 37. 38. 39. 40. 41. There was no dispute either before the judge or this Court as to the principles of claim interpretation, which the judge accurately summarised at [62]-[63]. As counsel for Mira emphasised, the overarching principle is that claims are to be purposively construed. The inventor's purpose in using the language of the claim is to be ascertained from the specification as a whole. As Lord Hoffmann explained in *Kirin- Amgen Inc v Hoechst Marion Roussel Ltd* [2004] UKHL 46, [2005] RPC 9 at [34], "[t]he question is always what the person skilled in the art would have understood the patentee to be using the language of the claim to mean". The correct interpretation of a claim is a question of law for the court. In general, expert evidence as to the meaning of the claim (as opposed to the common general knowledge with which the claim is read and the meaning of any technical terms employed in the claim) is inadmissible. There are two issues of interpretation of integer [d] of claim 1: the meaning of "the diverter valve is configured so that" and the meaning of "[the flow rate is] substantially unchanged". Triton contends that (i) the first phrase means that it is the configuration of the diverter valve which achieves the specified result, and (ii) the meaning of "substantially unchanged" is uncertain since the specification provides no criterion for determining what is and what is not substantial. Mira contends that (i) the specified result need not be achieved by the diverter valve, and (ii) the flow rate is "substantially unchanged" if, when water is flowing at a selected water temperature while the heater is energised, any increase in temperature during changeover from one or more selected outlets to another selected one or more outlets does not give rise to a risk of scalding ("the risk of scalding criterion"). In considering these contentions, it is important to start by recognising that claim 1 is a claim to an instantaneous water heater. The only necessary components of the instantaneous water heater of claim 1 are (i) a water inlet (not specifically referred to, but implicit), (ii) a heater tank which heats water, (iii) a diverter valve and (iv) at least two outlets. Accordingly, as counsel for Mira accepted, claim 1 is not limited to instantaneous water heaters for showers. It is only claim 19 that is limited to showers which include the claimed instantaneous water heater. As counsel for Triton pointed out, the instantaneous water heater could be incorporated in a dishwasher or a power washer for cleaning things. Indeed, it might be marketed as being suitable for more than one application. It follows that it must be possible to determine whether or not any particular instantaneous water heater falls within claim 1 or not without reference to any larger apparatus in which the instantaneous water heater may be incorporated or may be intended to be incorporated. Contrary to the submission of counsel for Mira, infringement

of claim 1 cannot depend on the use, or intended use, of the instantaneous water heater. That would mean that precisely the same instantaneous water heater could be both infringing and non-infringing (a situation which counsel for Triton aptly described as “Schrödinger’s patent infringement”). Once that is appreciated, it is clear from the language of integer [d], read in the context of claim 1 as a whole, and in particular the words “configured so that”, that it is the diverter valve which must achieve the specified result. Counsel for Mira submitted that achieving the specified result could depend on the design of the Judgment Approved by the court for handing down. *Mira v Triton* 42. 43. 44. 45. diverter valve in conjunction with the design of other elements of the product. I accept this submission so far as the other components of the instantaneous water heater are concerned, but not with respect to components of any larger assembly into the instantaneous water heater may be, or may be intended to be, incorporated. Turning to the meaning of “substantially unchanged”, it is common ground that the specification does not explicitly explain what is meant by this or provide any criterion for determining it. *Mira* argues, however, that it is clear from the passages in the specification quoted in paragraphs 15 and 16 above that the inventors’ purpose is to avoid the risk of scalding the user. Accordingly, *Mira* contends, the skilled reader would understand that the applicable criterion is the risk of scalding criterion. I do not accept this argument for the following reasons. First, if general language is used in a claim, then it is not normally legitimate to restrict the claim to a preferred embodiment: see *Nokia GmbH v ICom GmbH & Co KG* [2009] EWHC 3482 (Pat) at [41] (Floyd J) cited with approval in *Optis Cellular Technology LLC v Apple Retail UK Ltd* [2022] EWCA Civ 792 at [33] (Birss LJ, as he then was). In the present case the language of claim 1 is very general, and there is no basis for limiting it to the specific embodiment described in the specification. Secondly, as discussed above, claim 1 is to an instantaneous water heater which may be incorporated into, say, a dishwasher or power washer. In such applications scalding the user is not necessarily a concern. Indeed, it may be positively desirable for scaldingly hot water to be used (as BS EN 60335-2-53 recognises). It may nonetheless be advantageous for the water flow, and hence the water temperature, not to be substantially changed when switching from one outlet to another (e.g. from upper spray to lower spray in a dishwasher or from one nozzle to another in a power washer). Thirdly, even in the context of showers, it is evident from the passages in the specification relied upon by *Mira* that the purpose of the claimed arrangement of instantaneous water heater is not limited to avoiding scalding. On the contrary, the purpose is “to avoid any sudden unexpected change in temperature, especially an increase in temperature that may give rise to a risk of scalding [emphases added]”. This includes a sudden unexpected decrease in temperature due to an increase in flow rate, a possibility that is covered by the word “unchanged” in integer [d]. It also includes a sudden unexpected increase in temperature from, say, 25oC to 45oC. Both of these could be uncomfortable for the user of a shower incorporating the claimed instantaneous water heater, even if not dangerous. 46. Accordingly, I conclude that Triton is correct on the first issue, and that Triton is correct on the second issue at least to the extent that the risk of scalding criterion is not the applicable criterion. The judge was persuaded that *Mira* was correct, but I

respectfully disagree. Ground 3: infringement on the normal interpretation of claim 1 47. It follows from my conclusion on grounds 1 and 2 that Triton's DuElec range of showers do not infringe claim 1, and therefore do not infringe claim 4 either, for two reasons. First, although they admittedly satisfy the risk of scalding criterion, this is due not to the design of the diverter valve, but to the flow stabilisation valve and the Judgment Approved by the court for handing down. *Mira v Triton* thermal cutoff. Secondly, the risk of scalding criterion is not the applicable criterion for determining whether the flow rate is "substantially unchanged", and no other criterion has been proposed by Mira by way of an alternative case. Respondent's notice: infringement by equivalents 48. The judge did not deal with equivalents because she held that claim 1 was infringed on its normal interpretation. I can deal with this issue very briefly, because I understood counsel for Mira only to advance this argument if the Court concluded that Triton was correct on the first issue of interpretation ("the diverter valve is configured so that") but wrong on the second issue ("substantially unchanged"). Since I have concluded that Triton is correct at least to the extent explained above, it follows that this issue does not arise. Ground 4: uncertainty 49. 50. Section 72(1)(c) of the Patents Act 1977 provides that a granted patent may be revoked if "the specification of the patent does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art". This Court held in *Anan Kasei Co Ltd v Neo Chemicals & Oxides Ltd* [2019] EWCA Civ 1646, [2020] FSR 8 that a patent is invalid on this ground if a term used in the claims is uncertain, so that it is not possible to determine what is within the claims and what is not. It is necessary for this purpose to distinguish between a claim which has a fuzzy boundary (acceptable) and claim with a boundary whose location is impossible to ascertain (unacceptable). The Court noted that this ground of objection had previously been referred to as "ambiguity", but considered that it was more accurately described as "uncertainty". I can deal with this ground briefly for the reason identified in paragraph 47 above. As I have explained, it is common ground that the specification of the Patent does not explicitly provide any criterion for determining whether the flow rate is "substantially unchanged". The only criterion proposed by Mira is the risk of scalding criterion, which I have rejected. No other criterion has been proposed by Mira by way of an alternative case. In those circumstances it follows that claim 1 is insufficient because the boundary of the claim is impossible to determine. Is a 1% change in flow rate within the claim? 5%? 25%? 50%? The skilled person would have no idea. 51. Since both the claims said to be independently valid depend on claim 1, they are also invalid on this ground. Ground 5: excessive claim breadth 52. This does not arise. Ground 6: obviousness 53. It is not necessary to consider this.

Conclusion

54. For the reasons given above I would allow the appeal. The Patent must be revoked for insufficiency, and Triton has not infringed it even if it were valid. Judgment Approved by the court for handing down. Mira v Triton Lady Justice Falk: 55. I agree. Lady Justice Asplin: 56. I agree that the appeal should be allowed, that the Patent must be revoked for insufficiency and that Triton has not infringed the Patent, even if it were valid, for all the reasons set out by my lord, Lord Justice Arnold.

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