



PATENTS ACT 1977

BETWEEN

Secretary of State for Defence

Claimant

and

Farrow Holdings Group, Inc.

Defendant

PROCEEDINGS

Reference under section 72 of the Patents Act 1977 In respect of
Patent numbers GB2344348B and GB2372039B

HEARING OFFICER

Peter Slater

MR. RICHARD DAVIS QC appeared on behalf of the Claimant

MR. NIGEL FARROW appeared on behalf of the Defendant

Hearing date: 01 July 2013

DECISION

Issue in dispute

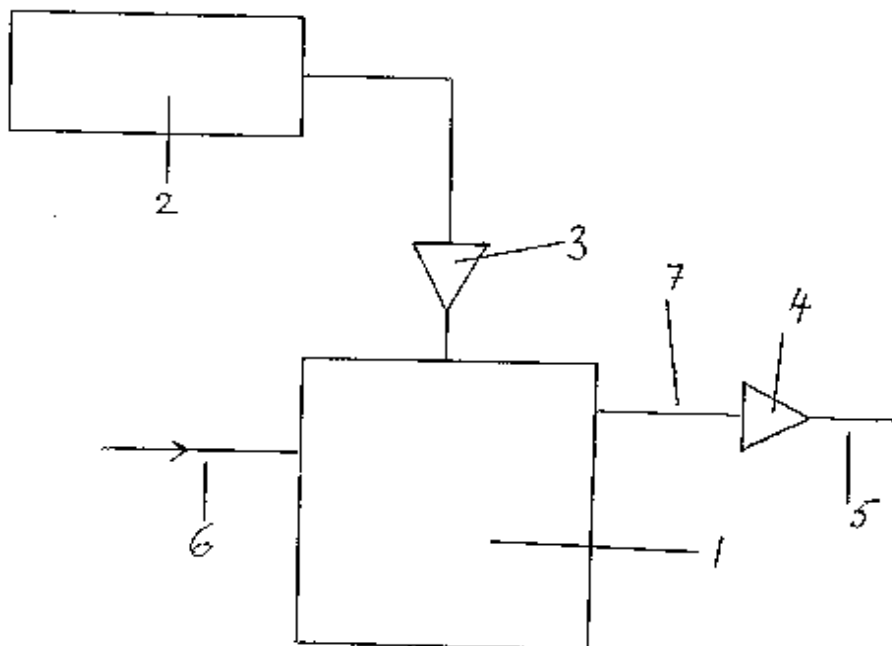
- 1 Patents GB2344348B (“the parent”) and GB2372039B (“the divisional”) stand in the name of Farrow Holdings Group Inc (“the defendant”) The patents were granted on 26 February 2003 and 30 October 2002 respectively and claim an earliest priority date of 4 December 1998.
- 2 An application for revocation under section 72 was filed by The Secretary of State for Defence (“the claimant”) on 9 January 2004 on the grounds that the invention as claimed in both patents is not new and involves no inventive step. Furthermore, it is argued that the specifications are insufficient insofar as they do not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art. The defendant denies these claims.
- 3 Proceedings have not gone smoothly, and it has taken a period of some 9 years to reach the substantive hearing during which time there have been several additional hearings on procedural issues. The patents then lapsed on 6 December 2007 due to non payment of renewal fees. Following an application by the defendant for restoration on 31 July 2009, the patents were eventually restored by way of an Office

decision on 24 January 2011¹. The substantive hearing then took place before me 1 July 2013. At the hearing, the claimants were represented by Mr Richard Davis QC, the inventor Mr Nigel Farrow appeared for the defendant. I asked Mr Davis to bear in mind Mr Farrow's inexperience in legal matters and I am grateful to him for kindly summarising the points he made for the benefit of Mr Farrow and for his flexible approach to the proceedings.

The invention

- 4 The invention relates to a method for removing surface coatings such as paint, varnish or biological growth from the outer hull of a boat. The opening passages of the patents indicate that the removal of a layer from a surface by impacting an abrasive material against the layer is well known. Furthermore, grit or sand-blasting has been used for many years to clean stone buildings or painted metal surfaces such as railings and superstructures including oil rigs. The particles of grit or sand are usually mobilised by means of a carrier fluid, normally air or water.

FIGURE 1



- 5 According to the patent specification, commonly used methods suffer from the drawback that damage is often caused to the material beneath those layers being removed. This is especially true where the methods are employed to remove

¹ BL 0/017/11

coatings or surfaces from a relatively soft material such as wood or fibre glass. The problem is particularly acute where the surface is part of a boat.

- 6 Figure 1 is the only illustration of the apparatus which is suitable for use in the claimed method. Compressed air is passed from a compressor 2, via an inlet valve 3 to the basting pot 1. Water is also supplied to the basting pot via an inlet pipe 6. The basting pot 1 also comprises an outlet pipe 7. The outlet pipe 7 has at its distal end a nozzle 5 through which the flow of material is controlled by means of outlet valve 4.
- 7 In the embodiment of the invention, a spray mixture of olivine and water from the domestic supply, at ambient temperature, is charged to the basting pot 1. However, the specification makes it clear that other minerals may be used e.g. andalusite, spodumene, diaspore, congolite, spessartine and andesine. Similarly, instead of water, other solvents may be used. Alkyl alcohols such as ethanol, propanol, iso-propanol, ethylene glycol or propylene glycol are all mentioned. Other solvents which may be contemplated include acetone, butanone and sulpholane.
- 8 When water is used as the carrier fluid its consumption is often quite high. However, the invention is alleged to minimise the amount of water used by heating the water prior to spraying. For example, the description states that: *“The water supplied from a domestic or external source is normally provided at a temperature of below 20C. Where necessary however it may be heated up to about 50C. Heating the water to a temperature of between 25 to 40C has been found to reduce water consumption.”* I have highlighted this aspect of the invention as it seems that this disclosure of heating the water and the effect it has on the blasting process is critical to Mr Farrow’s defence at least insofar as the parent application is concerned.
- 9 Of course the legal monopoly covered by each patent is defined by the claims, the wording of which was chosen by Mr Farrow under legal advice. Claim 1 of the Parent is not limited to the use of water or the particular pressure used. However, it is limited to a range of particle sizes and fluid temperatures. It reads as follows:
 1. *A method of removing a coating from a surface, the method comprising:*
 - (i) *selecting a particulate solid suitable for re-moving the coating from the surface, the particulate solid having a particle size from 150 to 250 µm;*
 - (ii) *selecting a fluid as a carrier for the particulate solid:*
 - (iii) *heating the fluid to a temperature of from 25 to 50C;*
 - (iv) *distributing the particulate solid in the fluid to form a spray mixture;*
 - (v) *generating a pressurised jet to the spray mixture;*
 - (vi) *impacting onto a coating the pressurised jet of spray mixture to remove the coating.*
- 10 Claim 1 of the divisional is not limited by the temperature range of the fluid, but the fluid is water and the pressure range of the jet is defined. It reads as follows:

1. A method of removing a coating from a protected surface, the method comprising:

(i) selecting a particulate solid suitable for removing the coating from the surface, the particulate solid having a particle size from 150 to 250 μm ;

(ii) distributing the particulate solid in water to form a spray mixture;

(iii) generating a pressurised jet of the spray mixture; the pressure of the jet being from 3×10^5 to $1.5 \times 10^6 \text{ Nm}^{-2}$,

(iv) impacting onto a coating the pressurised jet of spray mixture to remove the coating.

- 11 At the outset, Mr Davis and Mr Farrow agreed that in addition to determining the validity of claim 1 of each patent, I should consider the independent validity of claims 6, 9 and 12 of the parent and claims 5, 6 and 10 of the divisional. I shall refer to those claims later, if I find that claim 1 in either patent is not valid.

The claimant's case

- 12 The claimant alleges that claims 1, 6, 9 and 12 of the parent application are invalid on the grounds of:
- a) lack of novelty/ inventive step in view of prior use at the Kalamaki Marina, Greece, in 1994 as supported by Mr Nicholson's evidence of direct and indirect heating of the water;
 - b) lack of inventive step over EP0358648 (Gagemarch/Nicholson); and
 - c) Insufficiency of disclosure/lack of novelty/ inventive step in view of prior use at the Kalamaki Marina, Greece, in 1994 as supported by Mr Nicholson's evidence of direct and indirect heating of the water;
- 13 Similarly, the claimant also alleges that claims 1, 5, 6 and 9 of the divisional application are invalid on the grounds of:
- a) lack of novelty/inventive step over US5112406 (Lajoie);
 - b) lack of novelty/inventive step over US4044507 (Cox);
 - c) lack of novelty/inventive step over Coating Consultants Limited (CCL) prior use, as supported by Mr King's evidence of trials at HMS Quorn in 1996;
 - d) obviousness over the skilled person's common general knowledge; and
 - e) insufficiency of disclosure
- 14 Although no witnesses were called the claimant relied upon statements and evidence provided by:

Bruce Nicholson: statement and evidence of prior use at Kalamaki Marina

Dr Peter Morris: statement and evidence of the common general knowledge

Gary King, statement and evidence of CCL prior use

Donald Blair (the statement was not in the bundle or the evidence files)

- 15 Although Mr Farrow, did not make detailed submissions in relation to his evidence at the hearing, he had provided evidence in the form of:

Alan Goodchild: statement and evidence of the common general knowledge

Malcolm McGugan: statement about the common general knowledge

Professor Shirvani: an expert report addressing novelty and inventive step

Julie Farrow and Mark Durrant: provide evidence of commercial success

Paul Harrison: A patent attorney for Novagraaf provides evidence of having difficulty corroborating the Kalamaki Marina tests.

Simon Whitlam: provides his assessment of the Kalamaki trials DVD.

Alexander Young: statement about trials for removing graffiti using the Farrow System

- 16 Mr Farrow is clearly very passionate about his invention and this was evident when presenting his submissions throughout the hearing. Indeed, at times, his feelings seemed to get the better of him. Although Mr Farrow spoke at length, he had some difficulty focussing on and responding to the arguments made by the claimant. However, I reassured Mr Farrow that I would take all his written submissions and evidence into consideration when making my decision.

The Law

- 17 The Comptroller's powers to revoke a patent on the application of another person are set out in section 72(1) of the Patents Act 1977 ("the Act"), the relevant provisions of which read as follows:

72.-(1) Subject to the following provisions of the Act, the court or the comptroller may by order revoke a patent for an invention on the application of any person ... on (but only on) any of the following grounds, that is to say –

(a) the invention is not a patentable invention;

(b) ...

(c) The specification of the patent does not disclose the invention clearly enough and completely enough for it be performed by a person skilled in the art;

...

- 18 Clearly part (a) and part (c) are those which apply to these proceedings and they indirectly refer to the need for the patents to meet the requirements of section 1(1) (and of course section 2 and 3) and also of section 14(3). For the benefit of Mr Farrow I shall refer to these sections of the Act in more detail than Mr Davis did, understandably so.

19 The relevant parts of section 1 state:

1.-(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –

(a) The invention is new;

(b) It involves an inventive step;

...

20 Sections 2 and 3 define what is meant above by “new” and “inventive step” respectively:

2.-(1) An invention shall be taken to be new if it does not form part of the state of the art.

(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.

(3) The state of the art in the case of an invention to which an application for a patent or a patent published on or after the priority date of that invention, if the following conditions are satisfied, that is to say -

(a) that matter was contained in the application for that other patent both as filed and as published; and

(b) the priority date of that matter is earlier than that of the invention.

(4) ...

3. An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

21 Section 14(3) sets out the requirement for sufficiency as follows:

14.-(3) The specification of an application shall disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.

22 Although Mr Davis did not specifically refer to the *Windsurfing* test as such, I must apply it when considering obviousness. The test was reformulated in the Court of Appeal judgement in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588 where at paragraph 23 of the judgement, Jacob LJ laid the test out as follows:

(1)(a) Identify the notional “person skilled in the art”

(1)(b) Identify the relevant common general knowledge of that person;

(2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;

(3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;

(4) Viewed without any knowledge of the alleged invention as claimed, do

those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?

Preliminary issues

Ownership of the patents

- 23 Mr Davis asked for clarification on the status of the patents and Mr Farrow confirmed he was the sole proprietor. However, by this I believe Mr Farrow meant that his company, Farrow Holdings Group, Inc., is in fact the patent holder and is recorded on the register as such.

Consequences of not calling witnesses

- 24 Both party's chose to call no witnesses for cross-examination, and thus it was not possible to test the reliability of their evidence in the normal way. Mr Davis indicated that the evidence contained in Mr Nicholson's witness statement would play a major part in this case and he pressed the point that Mr Farrow, whilst still being advised by a professional, had chosen not to call Mr Nicholson as a witness, and that therefore he could not argue that he was unaware of consequences of not doing so.
- 25 Mr Davis argued that since there was to be no cross-examination of Mr Nicholson his evidence must stand uncontested. He kindly pointed me towards the decision of Mr Richard Arnold QC (as he was then) in *Pan World Brands vs Tripp* [2008] RPC 2, in support of his argument, where he referred to paragraphs 33 to 37 of that decision and of particular note is paragraph 36 which states that:

*“Where, however, evidence is given in a witness statement filed on behalf of a party to registry proceedings which is not obviously incredible and the opposing party has neither given the witness advanced notice that his evidence is to be challenged nor challenged his evidence in cross-examination nor adduce evidence to contradict the witness's evidence despite having had the opportunity to do so, then I consider that the rule in *Brown v Dunn* applies and its is not open to the opposing party to invite the tribunal to disbelieve the witness's evidence.”*

- 26 I agree that without cross-examination Mr Nicolson's evidence must prima-facie remain unchallenged and so it would seem that Mr Farrow cannot invite me to disbelieve his evidence. However, as pointed out by Mr Farrow, this cuts both ways and so the evidence given by both parties' witnesses must stand unchallenged.

- 27 Of course, if I were to consider any of the evidence to be obviously incredible then I would take account of that in making up my own mind. As indicated in the Hearings Manual at 3.71: *“As with any other evidence, the hearing officer will need to decide how much weight to attach to it having regard to all of the circumstances of the case; in the Inpro case (paragraph 9) the court said even the evidence of an unsatisfactory expert who lacked objectivity was of some value as stating the most favourable level at which Inpro's case might be put. The ultimate decision is for the hearing officer alone based on all of the facts and evidence adduced in the proceedings, of which the expert's evidence is only one component.”*
- 28 I must admit that it is unfortunate that I do not have the benefit of cross-examination on this occasion, as this would have been a useful means by which the relationship between the parties and the reliability of their evidence could have been explored. I have therefore to decide the matter in light of the evidence currently before me.

Standard of proof

- 29 Mr Davis also argued that the standard of proof should be to the normal civil standard, that is, the case should be decided on the balance of probabilities. He cited in support of this assertion the case in *Kavanagh Balloons v Cameron Balloons* [2004] RPC 5 which effectively dismisses any notion of proof beyond all reasonable doubt as in criminal law. Having said that, Mr Davis did acknowledge EPO case law, in particular T472/92, which does suggest that if the applicant for revocation himself claims that a patent is invalid because he, the applicant, says he has performed the invention before the priority date, then he might have to prove his own prior use *“up to the hilt”*. This point was pressed quite hard, particularly in relation to the prior use evidence of Mr Nicholson, which Mr Davis said: *“is not prior user by the MOD”*.
- 30 Although, I am not strictly bound by EPO case law, it can be persuasive and in this case I take the general point that if an applicant for revocation claims prior use he would need to convince the court that he had actually done so – for obvious reasons. Perhaps it also illustrates a more general point in that the Hearing Officer must always consider the status of a witness in relation to the defendant when weighing up the evidence. For example, even with the best of intentions, a competitor might find it difficult to be completely impartial whereas the situation may be different where the evidence comes from an independent third party source.
- 31 Subject to the caveat provided by the aforesaid EPO case law, I consider that the normal civil standards of proof apply in this case and although Mr Davis expanded this point further, it is simply a widely accepted point of view.

Prior use and availability to the public

- 32 Since the claimant intended to partly rely on disclosures of prior use, Mr Davis discussed the law relating to what amounts to a prior public disclosure and he referred me to the case of *Lux Traffic Controls vs Pike Signals Limited* [1993] RPC 107, 133. In particular he referred to paragraph 35 which states:

“.....Thus what is made available to the public by a machine, such as a light control system, is that which a skilled man would, if asked to describe its construction and operation, write down having carried out the appropriate test

or examination. To invalidate the patent, the description the man would write down must be a clear and unambiguous description of the invention claimed.”

- 33 Also referring to the public demonstration in the famous case of *Windsurfing International Inc. v Tabor Marine (Great Britain) Ltd* [1985] RPC 59, Mr Davis argued that an enabling disclosure to the public, no matter how obscure, is enough to invalidate a later filed patent application. Thus, he intended to demonstrate how Mr Nicholson’s evidence showed that such a demonstration in public had taken place.

Selection inventions

- 34 The claimant also made submissions on the law in relation to making selection inventions. As set out by the Court of Appeal in *Dr Reddy’s Laboratories (UK) v Eli Lilly* [2010] RPC 9, there are two key principles, the first of which relates to individualised disclosure and novelty. Mr Davis pointed me toward paragraphs 30 and 31 of that decision which read as follows:

“30. Thus logic dictates rejection of the argument that a disclosure of a large class is a disclosure of each and every member of it. So also does EPO case-law. ...

So what one must look for by way of an anticipation is an “individualised description” of the later claimed compound or class of compounds. This case [in which there was a disclosure of a class totally 1019 compounds] is miles from that.

...

31. It is not necessary here to go into what is sufficient to amount to an “individualised description.” Obviously the question may partly be one of degree, but other considerations may come in too, for instance the specificity of any indicated purpose for making the compounds. A mere woolly indication of the possible use of the prior class may require less specificity than a precise one.”

- 35 Thus, the earlier disclosure of a broad class does not necessarily constitute a disclosure of each and every member of that class. An individualised description may be required. However, where there is no novelty destroying individualised description in the earlier disclosure a second basic principle applies and that is the requirement for an inventive selection. Paragraphs 50-51 of Dr Reddy’s judgement provide some useful guidance and read as follows:

50.The EPO jurisprudence is founded firmly around a fundamental question: has the patentee made a novel non-obvious technical advance and provided sufficient justification for it to be credible?A “selection” (by which I mean the later claimed compound or sub-class) which makes a real technical advance in the art is patentable.

51. More specifically Mr Carr contended that a sub-class or individual member of a prior art published class was taken to be obvious if it was a random selection from the earlier class. I have no difficulty with that. Such a

"selection" provides no technical contribution. Mankind can learn nothing new from it. Nor does Lilly dispute that proposition. It is said in its skeleton argument: "Lilly does not dispute that in relation to obviousness a selection from the prior art cannot be merely arbitrary."

52. *Of course one has to consider here what is meant by an "arbitrary selection." The answer is to be found in the guiding principle – is there a real technical advance?*

- 36 The claimant's skeleton also highlights a comment made by Aldous J in the earlier case of *Boehringer Mannheim v Genzyme* [1993] FSR 716 in which he says:

*".....The concept of selection patents has existed for 60 years. That concept enables a valid patent to be obtained for the selection of a product or process from a range of known or obvious products or processes because of a surprising and non-obvious advantage over the others. The basic requirements for a valid selection are referred to by Slade LJ in *Hallen Co. V Brabantia (UK) Ltd.* [1991] RPC 195 at 217. To shorten this judgment they can be summarised. The selection must be based on a substantial advantage of special character. The selected member or class must have the advantage, and the specification must direct the mind of the skilled reader to the advantage of the selection from the class."*

- 37 Whilst there may well be some synergy between the particular pressure, temperature and particle size ranges claimed in the patent, Mr Davis argues that it is not enough to merely speculate as to the advantage especially where there is synergy between the components of a claim following the judgement in *Glaxo Group Ltd's Patent* [2004]RPC 43 where at 114, Pumfrey J said:

"If a synergistic effect is to be relied upon, it must be possessed by everything covered by the claim and it must be described in the specification. No effect is described in the present specification that is not the natural prediction from the two components of the combination...."

- 38 Mr Davis discussed UK and EPO case law in more detail, but the point is made well. I accept that the patentee should, in claiming a novel and non-obvious selection, indicate not only what the surprising advantage is but also quantify the advantage given by the selection. This is sometimes done using results obtained via the necessary experimentation – perhaps comparing with inferior results obtained with a different combination of parameters. Critically, this disclosure must be made in the patent itself. It is not enough to provide the information later. Otherwise it would be all too easy to claim a novel and inventive selection at filing without justification. In effect, one could make an arbitrary selection.

The skilled person and the common general knowledge

- 39 I have already referred to the objective test set out in *Windsurfing/Pozzoli* and this is the approach I will follow later when considering the prior art. For now I shall set out in advance my consideration of the skilled addressee and his common general knowledge. I note that whilst making his submissions, Mr Farrow pointed out that he was the person skilled in the art. I understand Mr Farrow's frustration at the legal

fiction that is the notional skilled person for he is not like any real person. However, the courts have set out an objective test above and I am bound to follow it.

- 40 One must determine who the skilled person is and what he knows. The reason for this is simply that if you are a highly skilled expert, an engineering professor or the like, then it could be argued that every new invention or improvement on an old invention in one's field is likely to be obvious or not inventive. At the other end of the scale, if the skilled person is taken to be someone like a manual labourer, then it might seem that all improvements to known apparatus are inventive. Although these extreme views probably overestimate and underestimate the abilities of our professor and manual worker, respectively, the claimant's skeleton argument summarises this point by referring to *Conor v Angiotech* [2006] RPC 25, where at paragraph 35 Pumfrey J says:

"To an inappropriately defined skilled man, nothing may be obvious or everything may be obvious...."

- 41 It is well established that the person skilled in the art should be taken to be a person who has the skill to make routine workshop modifications but not to exercise inventive ingenuity or think laterally as set out, for example, by Laddie J in *Pfizer Ltd's Patent* [2001] FSR 16. The level of skill will depend on the subject matter of the patent itself, as indicated in *Dyson Appliances Ltd v Hoover Ltd* [2001] RPC 26, upheld by the Court of Appeal [2002] RPC 22.

So what have the witnesses got to say about the skilled person and his common general knowledge?

- 42 Professor Shirvani (for the defendant), Head of Engineering Simulation & Analysis at Anglia Ruskin University, was asked to advise Mr Farrow on some technical issues in return for sponsoring a research student to investigate the matter under the Professor's supervision. Collaboration between Farrow Systems Limited and his research group over the previous three years has allowed the Professor to develop considerable familiarity with the blasting processes.
- 43 Neither the Professor nor his University received payment and I accept this. He is an expert in atomisation and nozzle technology and he reviewed the case made by the claimant before making his statement.
- 44 Professor Shirvani considers the passive heating of the water in the Kalamaki trials to between 25 and 50C to be surprising. Furthermore, he does not consider that the skilled person would find it obvious to adapt the system that Mr Nicholson demonstrated so that the water was actively heated to between 25 and 50C.
- 45 Mr Davis suggested that in giving evidence for the defendant, Professor Shirvani takes a view of the skilled person (perhaps under advisement) that is flawed and this undermines his evidence. Indeed, the Professor appears to question this view himself when he says at paragraph 20 of his statement:

"I have been told that "the skilled man" is a typical man in the field of blast cleaning as of December 1998, i.e. the skilled man is a blaster. I should point out that in the present case, the use of the word "skilled" is somewhat

inappropriate as the skilled man is a blaster, a typically low or unskilled worker.”

- 46 He also indicates at paragraph 21 that he believes the skilled person, the blaster, is “*unimaginative*” and “*without great intelligence*” and his common general knowledge is that which he would carry in his head as standard knowledge in the field.
- 47 I do not believe the skilled person is necessarily expected to remember everything and his common general knowledge may include material from well-known textbooks, laboratory manuals, and the specification of equipment he uses, etc. Furthermore, I consider that Professor Shirvani’s view of the skilled person is clearly at the low end of the scale and this does limit the usefulness of his evidence. His honestly held view that Mr Farrow’s patents are inventive over the prior art is based on a rather low hurdle for inventive step.
- 48 I shall look at Mr Nicholson’s evidence of prior use later. However, Mr Farrow and other witnesses provided useful information about what is known in the art, the skilled person and his common general knowledge.
- 49 Mr Peter Morris (for the claimant) is the technical director of Paint Performance Consultants Ltd and he has been involved in the blasting industry since 1972 and had an interest in academia before then. He appears to understand his duty to the tribunal and he provided cogent evidence and an impeccable CV.
- 50 He states that certain basic criteria and their interrelationships have been well understood since he joined the “blasting” industry. These criteria include:
1. Particle size and hardness
 2. Air or water pressure at the nozzle and its relationship to velocity
 3. Nature and hardness of the substrate/surface to be cleaned
 4. Traversing speed of the nozzle relative to the surface
 5. Distance of the nozzle from the surface
- 51 Typical, he says, is the use of olivine grit of <250 μm particle size. In the case of wet blasting, the water pressure traverse speed and distance from the nozzle are varied until the customer’s specified result is achieved. He noted that Farrow’s patents acknowledge that the various criteria may be varied from job to job.
- 52 Mr Morris also indicates that when trying to selectively remove a defective top coat without damaging the intact anti-corrosive coatings beneath, in the mid-1990s, he personally trialled a system where fluid pressures of 100-110 psi ($7 \times 10^5 \text{ Nm}^{-2}$) were used very successfully.
- 53 Mr Donald Blair (for the claimant) was referred to in the claimant’s skeleton and when Mr Davis began to discuss his evidence, Mr Farrow implied he had only just become aware of it. It was absent from the bundles and it could not be found in the evidence binders. In the circumstances, Mr Davis did not pursue this evidence in any detail and I do not consider that my decision turns on it.
- 54 Mr Gary King (for the claimant) was employed within the MOD, specifying paint coatings to be used on Royal Navy vessels. He suggests that the technology that Mr

Farrow had demonstrated to the MOD in July 2000 had been in the public domain for eight years.

- 55 Exhibit 6 of Mr King's evidence is a report about trials of glass reinforced plastic (GRP) substrate preparation made at HMS Quorn in July 1996. This document indicates how epoxy deck coatings were removed whilst the barrier coat was left intact using wet blasting. At paragraph 4.9 it says that to allow wet blasting *"the garnet was therefore changed to 80 mesh, and the pressure reduced to 30psi, but this was soon reset to the original 36-40 psi."* These ranges correspond to particle sizes of up to 178 μ m and pressures approaching 3x10⁵Nm⁻².
- 56 Mr Alan Goodchild (for the defendant) speaks highly of Mr Farrow and his system. He is the director of Goodchild Marine Services Limited which provides services which include cleaning of hulls. Mr Goodchild admits in paragraph 10 of his statement that he has little experience of wet blasting other than Mr Farrow's demonstration. He does go on to say that: *"I am familiar with dry blasting and the elements that I identified as factors to vary within the process were air pressure, flow rates of the blasting medium, type of medium, the shape and size of the nozzle tip"*. He goes on to say his company does little blasting but he intends to use the "Farrow System" in future as it is superior to his own "sponge" blasting equipment.
- 57 Mr Malcolm McGugan (for the defendant) is a polymer composite materials technologist who was employed within the composite group at DERA. He has an interest in the repair of GRP materials and he notes that the "Farrow System" was approved for use in the wet blasting of GRP hulls for the MOD and the Royal Navy. Clearly Mr Farrow's invention impressed them greatly.
- 58 Mr McGugan says at paragraph 35 that in seeking to improve the blasting process, the "skilled blaster" would not consider actively heating the carrier fluid to a temperature in the claimed range. Furthermore, he says *"water would not normally heat up to temperatures within the range 25 to 50C. Even on a blisteringly hot dayunless specific steps were taken such as supplying an artificial heater or placing the water tanks in direct sunlight for extended periods...."*
- 59 At paragraph 37, Mr McGugan indicates that the factors he would vary to improve the process whilst preventing over-blasting (i.e. damage to the substrate) are: particle size and hardness; pressure; mix ratio; and nozzle shape. He goes on to suggest that the skilled person would not appreciate the significance of heating the water to between 25 and 50C. He would not have thought such heating would have any effect unless it was at a much higher temperature, for example 65 to 100C.
- 60 Mr Farrow's statement explains the history of his invention and the trials it underwent. In developing his invention he says that when he used pressures of between 2 and 7 bar, his system used less water than prior art systems operating at higher pressures. In his statement he also claims his system only used 2 litres per minute of water, whilst the prior art system he discusses used 52 litres per minute.
- 61 Mr Farrow says he tested 35 different types of blasting media (sizes, grades and material). Eventually he found the best combination of parameters was as follows:
1. Olivine, with a particle size of 170 to 190 microns

2. Water
3. Pressure between 3×10^5 to $1.5 \times 10^6 \text{ Nm}^{-2}$
4. Olivine to water volume ratio of 2:1

62 When he poured hot water into the blast pot Mr Farrow says: *“What I saw was unbelievable. The system was about four to five times faster than it had been with regular mains water, which I have been told is about 10°C . I couldn’t believe it. After some tinkering with different temperatures I concluded that significant improvements were observed within the range of 25 to 50°C , the ideal range being 25 to 40°C . “*

63 Mr Farrow also goes on to describe the trials of his system and the success his system has had. Indeed, it appears to be an excellent system with which he has had considerable success. He also goes on to criticise the claimant’s evidence, particularly the passive heating of the water, and I take note of his comments.

64 Mr Farrow’s main technical point in responding to Mr Davis at the hearing appeared to be the importance of heating the water and that this produces more energy. Heat was the key to the efficient working of his invention and also the choice of particle size is critical. I have no doubt this is true but Mr Farrow’s patents do not provide any information about the selection process. From what Mr Farrow says, there may also be an invention in the way Mr Farrow’s system heats the water but that is not specified in his claims.

65 I appreciate the views given by all the witness. Although they do not necessarily agree on all points, they do present me with a general picture of what was well known in the art. Of course, their general knowledge of the art and the knowledge contained in the most relevant prior art is not necessarily the same as that of the notional skilled person’s common general knowledge by virtue of their expertise.

So who is the skilled person and what does he know?

66 I consider that in this case the skilled addressee is not the manual worker who typically operates the apparatus (i.e. the “blaster”). Nor does he have the level of expertise of someone like Mr Farrow or Mr Nicholson. He is a technician who has the capacity to understand the prior art if presented to him and to make routine workshop modifications. This may include the ability to carry out routine trials and testing. But, I stress, he is not an expert or an inventor.

67 In my opinion, the skilled person’s common general knowledge would include knowledge of the techniques and apparatus commonly used in the art of blasting. He would also appreciate that solid particles such as sand, suspended in water, were commonly used to blast surfaces to remove unwanted matter and he would appreciate the advantage of being able to clean a surface without damaging it as this seems to be an entirely sensible objective. I also consider that the skilled person would have a basic understanding of how the jet pressure/velocity and particle size might affect the blasting process (i.e. larger particles moving faster have a higher impact force) because this would follow on from an understanding of basic physics. It would be merely common sense for him to appreciate the effect the distance of the nozzle from the surface and the traverse speed would have (just as one might when cleaning a patio with a jet washer).

68 On the other hand, it does not naturally follow that he would consider the effect that a modest increase in fluid temperature might have. Although, putting health and safety issues aside, I see that he might logically assume that very hot water might remove grease or oil more quickly, if he faced that problem.

Claim construction

69 Having discussed the skilled person's attributes and before tackling the substantive issue, I need to consider the constructional points raised by the claimant. Of course step two of *Windsurfing/Pozzoli* requires me to construe the claim to determine what the inventive concept is. I also need to do this before deciding whether the claimed inventions are novel.

70 To decide how to construct the claim, I must use the principles set out by Lord Hoffmann in *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9. I must put a purposive construction on claim 1, interpret it in the light of the description and drawings as instructed by Section 125(1), and take account of the Protocol to Article 69 of the EPC. In other words, I must simply decide what a skilled person would have understood the patentee to have meant by the language he had chosen to use for the claim.

71 There was not a great deal made of the construction of the claims at the hearing. However, the claimant did make the following points in his skeleton argument. Claim 1 of the parent and the divisional contain the phrase:

“(i) selecting a particulate solid suitable for removing the coating from the surface, the particulate solid having a particle size from 150 to 250 μm ,”

72 Mr Davis suggested that this clause does not necessarily limit mixtures which fall within the claim to having particle sizes only within this range. The suggestion being, I think, that a particulate solid having most of its particles within this range, whilst also having some smaller particles (having little impact effect), would be suitable for removing the coating from the surface. On page 7, lines 3-6, the patent description says:

“The particulate solid can have a particle size of 60 to 100 mesh. It has been found that if the particles are too large, then they can cause damage to the surface itself, rather than simply removing the coating. A mixture of particles having differing mesh sizes could also be used.”

73 The use of the term “mesh” indicates how particles above a certain size can be removed using a sieving technique and also that the distribution may be more accurately defined in terms of the maximum size allowed. Mr Davis argues the description suggests that the main problem lies in having particles which are too large and cause too much damage. Alternatively, he says it may simply indicate an inconsistency.

74 Inconsistency or not, it seems clear to me that this clause should be read as excluding all particles greater than 250 μm , whilst the skilled person would appreciate that the vast majority of the particles should lie within the “150 to 250 μm ” range to provide the best effect. By using meshes to obtain the particles, the skilled

person would appreciate that smaller particles could be present and they would have no material effect on the invention as long as they were in the minority. A particulate solid with particle size distribution predominantly within the claimed range would fall within the claim.

75 However, the skilled person would not consider that a particulate solid having a range and statistical distribution such that only a small minority of particles were within the ideal “150 to 250 μm ” range would suffice because it would be inefficient in achieving the desired effect. There is clearly a matter of degree that needs to be considered when assessing the prior art.

76 Claim 1 of the parent also includes the limitation of:

“(iii) heating the fluid to a temperature of 25 to 50C; “

77 The only disclosure of the heating process is on page 7, lines 21-30 of both patents, which read as:

“The water supplied from a domestic or external source is normally provided at a temperature of below 20C. Where necessary however it may be heated up to about 50C. Heating the water to a temperature of between 25 to 40C has been found to reduce water consumption. The heating may be accomplished by means of an independent heating element mounted within the blasting pot or alternatively to the water inlet supply. As an alternative, where a petrol or diesel powered generator is used to operate for example a compressor to produce compressed air, then the exhaust pipe can pass through the water, on its way to the gases being vented, and the heat from the exhaust can be utilise to raise the temperature of the water.

78 The description suggests that the water may be heated in some way, whether that is done in the blasting pot or at the inlet is not disclosed. There is no indication that the heating might be done electrically or otherwise but there is one example given of exhausting an internal combustion engine through the water in the basting pot to provide heating and pressure. Furthermore, Mr Davis argues that claim 1 of the parent is not limited to the use of water or liquid and that there is no limitation whatsoever as to how or where the fluid is heated. In this respect I agree with the claimant. All the claim requires is that the fluid is brought to the correct temperature, 25 to 50C, before spraying commences.

79 Having clarified these two points, I consider that claim 1 of the parent and divisional applications are clear. The skilled person would therefore have no difficulty understanding what falls within the claims for the purpose of identifying either an infringing act or an invalidating disclosure before the priority date.

The inventive concept

80 Having already considered the claims and the aforementioned constructional points, I believe that claim 1 of each patent clearly defines the inventive concept - as required by step two of the objective test. The claims are not difficult to understand and there seems little point in repeating them in my own words. I shall of course consider the final two steps as I assess the obviousness arguments against each patent.

Novelty - Kalamaki Marina prior use

- 81 The parent case is firstly said to lack novelty or is obvious in view of the Kalamaki Marina prior use. Mr Nicholson's witness statement is accompanied by 12 exhibits including various marketing brochures, system specifications and a DVD said to be taken at the Kalamaki Marina in 1994. He suggests there is nothing new in either of the patents.
- 82 Mr Nicholson is the Director of a company, LCC Restorations Limited, which specialised in restoration of buildings. From an engineering background, he moved into the field of blast cleaning when working for Kue Engineering Limited in the late 1970s. He clearly has a great deal of expertise in this field as evidenced by his statement and his own earlier patented invention, EP0358648 (Gagemarch).
- 83 He says that blasting with a suitable particulate solid in an air stream has been known since the 1930s whilst water was introduced as a carrier fluid no later than the 1970s.
- 84 Mr Nicholson describes a device known as the System 2000 which was trialled in January 1994 at the Kalamaki Marina in Athens, Greece. The system was a pressurised water system and was used for removing anti-fouling coatings on boat hulls which were required to be re-applied every few years. The removal of the coating is particularly difficult on glass reinforced plastic (GRP).
- 85 With regard to the Kalamaki Marina trials, Mr Nicholson suggests the DVD which is transferred from video and presented as Exhibit 7, shows the trial made in January 1994 at a large marina and so the trial was made in public. He believes the pressures used that day were between 3.5 and 4 bar. It was also common to use pressures in the range of 1 to 7 bar (i.e. 1×10^5 to $7 \times 10^5 \text{Nm}^{-2}$).
- 86 Mr Nicholson says particle sizes in the range of 40 to 160 microns and a hardness of 2.5 Mohs were used. I note this particle range only just overlaps the range claimed in the patents and so one might assume that only a small percentage of particles fall within the claimed range.
- 87 The temperature on that day in January was said to be over 20C but not over 25C. However, at paragraph 24 Mr Nicholson says that he considered using hot water and he heated some water to "*.....somewhere below boiling point (60 to 70°C) and poured it into the pressure vessel. By the time it emanated the lance, it was estimated to be around 40 to 45°C. The results obtained showed a small, but not measureable, improvement in the removal of grease from contaminated surfaces.*

The idea was thought worthy of later investigation, and had been included as claimed in our original patent of 1977."

- 88 I am not sure which patent Mr Nicholson is referring to in his statement. However, he is named as the inventor on the earlier Gagemarch patent which will be discussed shortly. This patent does suggest heating the water, giving credibility to this aspect of Mr Nicholson's statement.
- 89 Consideration was given to modifying the system to use electrical heaters but they were considered to be complex, costly and required time to heat the water. Handling problems also arise from using hot water.
- 90 Mr Nicholson also says that subsequent trials occurred in the summer months and the ambient temperature was often over 30C. The water, which initially entered the pressure vessel at about 18C, often rose above 25C and was more like 30C. He could tell this from "*hand feel*" and he says that on "*one occasion we actually measured the temperature of the water in the pot using a thermometer.*"
- 91 Over the next three years Mr Nicholson says he used olivine with particles sizes in the 90 to 250 micron range. He also refers to an updated System 2000 fact sheet apparently up-dated in July 1998 - a few months before the priority date of the patents. The so called "P type machines" he mentions are said to operate at between 0.5 to 7 bar and are designed to handle abrasives having particle sizes up to 300µm.
- 92 Mr Nicholson also provides evidence about the type of abrasive provided by Norsk Hydro. In particular exhibit 9 is said to date from 1994 and it relates to a product called "Hydro Façade" which comes in two particle size ranges: Standard Grade (80-200 µm) and Fine Grade (<80 µm). Exhibit 8 comprises sales literature that suggests this product can be used in "*all known basting and ejector machines.*"
- 93 Addressing the reliability of Mr Nicholson's evidence, Mr Simon Whitlam of Farrow Systems Limited, gives his view of what the Kalamaki trial DVD shows. He casts doubt on Mr Nicholson statement, what the DVD shows, and about the mains water temperature at the marina. I appreciate he has expertise, but his view is based purely on what he sees in the video, made in January 1994. He was not there.
- 94 I have already mentioned Professor Shirvani's view of the skilled person and his view on the Kalamaki tests.
- 95 Paul Harrison (for the defendant) is a patent attorney who worked for Mr Farrow's original legal representatives, Novagraaf Norwich Limited, at the time he made his statement. He says he contacted Mr Chris Pallister, who was identified as a possible expert witness in relation to blasting on naval vessels. Mr Harrison says Mr Pallister was reluctant to give evidence because Mr King (already referred to) was responsible for placing orders with his company worth millions of pounds and he was apparently concerned that if he gave evidence it would prejudice his relationship with the Ministry of Defence.
- 96 Mr Harrison has no reason to say this unless it was true but that does not mean to say that Mr Pallister's concerns are well founded. It would seem to be an unlikely

and somewhat petty approach for a government department wanting to make the best use of tax payer's money.

- 97 Mr Harrison also says he had difficulty finding both the exact Kalamaki Marina (there are several) and the agent for the owner of the boat on which the blasting trial was carried out. He tried to contact the agent, Mr Vasilis Kirikos, having received his details from the Defence Procurement Agency (DPA), but he received no reply. He says: *“Mr Farrow does not know whether or not the DPA, the Ministry or the Secretary of State for Defence were in contact with Mr Kirikos prior to the provision of the E-mail address.”*

Conclusion

- 98 Overall, I have some concerns about Mr Nicholson's evidence. I also appreciate that he may be in competition with Mr Farrow and may not be an impartial third party. I am further concerned that Mr Harrison struggled to obtain independent evidence about the Kalamaki trials.
- 99 Again, I stress that it would have been useful to see Mr Nicholson undergo cross-examination to test his evidence. However, Mr Farrow chose not to cross-examine and despite my reservations I cannot go as far as to say that Mr Nicholson's evidence is obviously incredible. Indeed, as a general indication of what was known in the art before the priority date his evidence is not inconsistent with that of Messrs. King and Morris in particular and his earlier patent supports the idea that he tried heating the water.
- 100 Therefore, I will take what Mr Nicholson says about the active heating of the water at face value. I also consider that the water held in a metal blasting pot could heat up to over 25C passively in direct sunlight on a summer's day in Greece when subsequent trials were made – although not in January when the video was taken. Of course, part (iii) of claim 1 of the parent makes no requirement as to how the water reaches the required temperature range.
- 101 The pressures used that day (3.5 to 4 bar) do appear to be within the range defined in part (iii) of claim 1 of the divisional and it was common to use a broader range and to vary the pressure.
- 102 Although Mr Nicholson gives an indication that the particles sizes required by claim 1 in both patents had been used by him over subsequent years, this was not apparently the particle size used at the particular incidence of alleged prior use. Given a skilled person's interpretation of part (i) of both claims (see paragraphs 73 to 77 above), I do not consider this aspect of either claim to be anticipated.
- 103 Therefore, I do not consider that the Kalamaki trial invalidates the claims for want of novelty.

Inventive step - Kalamaki Marina prior use

- 104 Having accepted that the temperature at the Kalamaki trial in January, as a result of active heating, was in all probability within the parent's claimed range and that the subsequent test in the summer would be likely to meet this requirement passively, I will now consider the difference between the prior art and the claims.
- 105 Applying step 3 of the *Windsurfing/Pozzoli* test, it seems to me that the difference between the inventive concept defined by claim 1 (of both the parent and divisional) and the Kalamaki Marina prior use lies in the particle size range used.
- 106 There is a weight of evidence to show me that it was well known to use abrasive particles in wet blasting which fall within the 150-250 μm range. For example, Mr Morris said that in wet blasting it was common to use "*olivine grit of <250 μm particle size*". In my view, it would be obvious for skilled person to alternatively use abrasives in this particular range as they were commonly available and he would be expected to try out slightly different particle sizes and water pressures to achieve the best result on any particular job.
- 107 Thus, I consider claim 1 of both patents to lack an inventive step.
- 108 Now considering the dependant claims of the parent. Claim 6 of the parent defines a temperature range of 25 to 40 C. Given Mr Nicholson's evidence, this range does appear obvious. Claim 9 requires a solid to liquid volumetric ratio of 2:1 and at paragraph 55 of his evidence Mr Nicholson indicates that ratios of 1:1 were used for sand whilst when garnet is used the ratio increased to between 1.5:1 and 2.8:1. Claim 12 of the parent limits the pressure range to that of claim 1 of the divisional. Thus, claims 6, 9 and 12 of the patent are also obvious.
- 109 Going on to the dependent claims of the divisional, claim 5 requires that the particulate is olivine. This appears to be a well known material based on both Mr Morris and Mr Nicholson evidence.
- 110 Claim 6 is to the 2:1 volumetric ratio again whilst claim 9 is to the marginally narrower pressure range of 4×10^5 to $1 \times 10^6 \text{ Nm}^{-2}$, which seems an entirely conventional pressure range, as indicated by various witnesses. Thus, claims 5, 6 and 9 of the divisional are also obvious.

Parent – Inventive step over EP 0 358 648 (Gagemarch)

- 111 The Gagemarch patent was published on 21 March 1990, just over eight years before the priority date of Mr Farrow's patents. The description makes it clear that it is a wet abrasive blasting apparatus that uses and re-uses wet sand or another solid abrasive medium. The device appears to operate at a pressure of 100psi (i.e. nearly $7 \times 10^5 \text{ Nm}^{-2}$). It can be used to clean a variety of surfaces and falls within the same technical field.
- 112 Again, I must determine the difference between the inventive concept, as defined by claim 1 of the parent, and the prior art disclosed in Gagemarch, and then decide if the step taken would be obvious to the skilled person.

- 113 Having considered the arguments put forward and having read the Gagemarch specification I can see that it discloses all the features of claim 1, apart from parts (i) and (iii).
- 114 With regard to particle size, Gagemarch merely says that sand is the abrasive and, as I understand it, that can cover a range from as little as 60 to 200 microns for fine sand to as large as 2000 microns for course sand. It also states that a wide range of easily obtainable abrasives, both wet and dry may be used.
- 115 Given the objective of the invention, that is to clean a surface without damaging the substrate, larger particles sizes might well be ruled out by the skilled person. Furthermore, the overwhelming evidence from the witnesses is that the patents' claimed range is within that which is entirely conventional. Crucially, Mr Farrow gives no indication in his patent about what is special about the range he selects in order to justify a selection invention.
- 116 Claim 9 of Gagemarch also says the temperature of the liquid may be above ambient temperature. Also, at the bottom of column 7, at lines 52-54 of the description says that the apparatus may be used for the *"removal or oils and greases from surfaces (possibly using hot water, or solvent in place of water, to speed removal)."*
- 117 Admittedly, this statement allows for a wide range of temperatures, although one might exclude the highest temperature in consideration of the safety of the operator. As I have already said, I do not believe the skilled person would necessarily think to increase the temperature. However, Gagemarch does point him in the right direction and so he might be expected to try heating the water to different temperatures to find a range which was hot enough to achieve an improvement in the blasting process whilst not running the risk of scalding the operator.
- 118 Again, in selecting his range of 25 to 50C, Mr Farrow says little in his patent specification to justify his selection other than to say that it was simply found to reduce water consumption. This does not match the requirement set out in *Boehringer* (see paragraph 36 above) where it is suggested that: *"The selection must be based on a substantial advantage of special character."*
- 119 Overall, I consider that the invention as claimed in claim 1 of the parent application would have been obvious to the skilled person in view of the Gagemarch patent. Again, I also consider the features of claims 6, 9 and 12 to be entirely conventional and so appear also to lack an inventive step.

Divisional – novelty over of US5112406 (Lajoie)

- 120 Lajoie was published on 12 May 1992, it relates to a blasting process for removing coatings from sensitive metal and composite surfaces where the blasting media comprise mixtures of water-soluble crystalline sodium sulphate particles having average particle sizes ranging from 100 to 250 microns. The particles are contained within a water-saturated compressed air stream. The pressure of the blasting stream is said to be in the range of 0.7 to 7 bar which covers most of the claimed range. In one example, the optimum pressure is found to be about 4 bar ($4 \times 10^5 \text{Nm}^{-2}$).

- 121 In my view, the skilled person would consider that claim 1 of the divisional requires that the particulate solid is placed in the water to form a mixture for spraying. Pressure is applied to the mixture and then it impacts the surface as a pressured jet.
- 122 However, Lajoie uses water-soluble particles in an air stream and then effectively adds some water to the mixture of particles and air to cool the surface being blasted. One could not simply add the particles to water in a blasting pot for they would dissolve and have no abrasive effect. Therefore, I do not consider that Lajoie stands as a novelty citation and nor would it be obvious for the skilled person to modify the system of Lajoie into a wet blasting system for the same reason. Thus, the divisional is novel and inventive over Lajoie.

Divisional – novelty over US4044507 (Cox)

- 123 Cox was published in 1977 and discloses the use of olivine grit which is mixed with fluid and driven against a surface under fluid pressure. It is used to strip or clean surfaces such as metal, wood or fibreglass. The fluid may be gas or liquid. No mention is made of water but it is the liquid which is almost universally used in wet blasting and so I will take its disclosure as implicit.
- 124 The fluid pressure may vary between 20 and 300 psi (1.3×10^5 to 2×10^6 Nm⁻²). There is an indication that 20 to 60 psi (1.3×10^5 to 4×10^5 Nm⁻²) may be a preferred range because this range does not cause damage to an unprotected hand. I consider this enough to indicate that the claimed pressure range is disclosed.
- 125 The particle size of the olivine is said to be between 40 and 400 grit, which I believe is equivalent to between 425 and 23 microns. Given what I have already said about the lack of justification for the selection of the patent's particle size range, I consider that claim 1 of the divisional is anticipated by Cox. I also consider dependent claims 5 and claim 9 to be anticipated. It has already been established that the 2:1 ratio of solid to water is not inventive and so claim 6 is also obvious.

Divisional - CCL prior use (Mr King's evidence)

- 126 I have already briefly discussed Mr King's evidence, in particular Exhibit 6, which discloses wet blasting trials at HMS Quorn in July 1996. I have not received any indication as to whether these trials were made in public or in secret, therefore, I will assume the former. Neither do I have any good reason to consider Mr King's evidence to be unreliable having not been cross-examined.
- 127 The parameter ranges said to be disclosed at this trial correspond to particle sizes of up to $178 \mu\text{m}$ and pressures of 2.5 to 2.75×10^5 Nm⁻², which is just below the minimum claimed pressure range (3×10^5 to 1.5×10^6 Nm⁻²). So strictly there is not a lack of novelty in view of this particular instance of prior use.
- 128 Mr Davis argued that there can be nothing inventive in raising the pressure by this small amount and this is a reasonable proposition. It seems to me that the skilled person, having observed this demonstration and being aware from his common general knowledge that higher pressures are often used in wet blasting, would be expected to vary the pressure range to obtain the best result. If it truly provides a significant advantage, he would then operate the apparatus in that range.

Furthermore, the claimed range does not appear to be an inventive selection which is supported by the patent's description.

129 I consider that claims 1, 5, 6 and 9 of the divisional application therefore lack an inventive step.

Divisional – obviousness over the common general knowledge

130 There are instances, as seen above, where the skilled person is able to consider a piece of prior art, such as a patent specification or by examining a piece of equipment that is publicly demonstrated. He then may make the step from that disclosure to the claimed invention without prior knowledge of the invention. His common general knowledge helps him to take that step without demonstrating inventive ingenuity or thinking laterally.

131 In other instances, given a specific problem, the solution would simply be obvious to the skilled person. I also understand the point the claimant makes about the skilled person experimenting with the various wet blasting parameters to find an optimal solution for the particular surface to be cleaned. However, in this case, I consider that to reach the particular solution claimed just based on the skilled person's common general knowledge and without a pointer in the right direction from a piece of prior art is asking too much of the notional skilled person. Therefore, I do not consider claim 1 of the divisional to be obvious purely in the light of the skilled person's common general knowledge.

Sufficiency

132 A lack of sufficiency has been alleged against both patents. There are perhaps two aspects to sufficiency in Mr Davis' arguments. One relates to sufficient disclosure in the patents in relation to justifying a "selection invention" and I have dealt with that already. The other aspect is dealt with at the end of the skeleton argument and relates to the requirements of section 14(3).

133 Although I appreciate that it can be more complex than this and there is much case law, put simply, the patent specification must contain enough information for the skilled addressee to be able to go away and make or perform the invention which is monopolised by virtue of the patent's claims. This is sometimes referred to as "*classical insufficiency*".

134 I also understand the points that Mr Davis made in relation to what he referred to as "*Biogen insufficiency*", when he argues that the patentee is not entitled to a claimed monopoly which is excessively broad. In *Biogen Inc v Medeva plc* [1997] RPC 1, the House of Lords held that for the purposes of sections 14(3) and 72(1)(c), the disclosure must be sufficient to enable the whole width of the claimed invention to be performed and the disclosure of a single embodiment will not always satisfy the requirement regardless of the width of the claim.

135 Indeed, what one takes from this case is that a broad claim must be a fair generalisation of embodiments of the invention which are disclosed in the specification. Another way of putting it is that a fair cross section of ways of working

the claim must be disclosed in the description - not necessarily all ways or even the best way, just a reasonable cross-section.

- 136 This is often more of a consideration in chemical and pharmaceutical cases. However, in this type of mechanical art this consideration rarely applies and I do not consider that it does here so I will not dwell on this point. Having read the patents, I consider that the specifications are clear enough and complete enough for the skilled addressee to be able to make and operate the inventions claimed in Mr Farrow's patents. Consequently, I reject this aspect of the claimant's arguments.

Conclusion

- 137 I have found that claims 1, 6, 9 and 12 of the parent application GB2344348 and claims 1, 5, 6 and 9 of the divisional application GB2372039B are invalid, due to a lack of novelty and/or inventive step, and order that both patents be revoked unless an appeal is lodged within the time period specified below.

Costs

- 138 At the hearing, both parties agreed to deal with the issue of costs following the issuing of the decision. I therefore give both parties one month from date of this decision to make written submissions on the award of costs.

Appeal

- 139 Any appeal must be lodged within 28 days

Peter Slater

Deputy Director acting for the Comptroller