

PATENTS ACT 1977

IN THE MATTER OF patent application GB 9423327.7 in the name of European Environmental Recycling Ltd, international patent application PCT/GB 95/01686 in the name of Donald Roy Crawley and UK Patent GB 2291419 in the name of Victor George Bennett

and

IN THE MATTER OF referrals under sections 12 and 13 of the Act by Victor George Bennett and Thomas Malcolm Kemp.

DECISION

Introduction

1. This is a dispute over inventorship and proprietorship in relation to a family of applications and one granted patent.
2. Some time in the early part of 1994, the opponent Donald Roy Crawley (hereafter "Crawley"), one of the co-referrers Thomas Malcolm Kemp (hereafter "Kemp") and a Mr Henry Flock (hereafter "Flock") agreed to co-operate in the establishment of a new company to exploit a process for the recycling and re-use of waste plastics materials. The precise provenance of this process is one of the key issues in dispute in these proceedings.
3. A company, European Environmental Recycling Ltd (hereafter "EER") was formed in April 1994 and the first GB patent application, number 9414455.7 (hereafter "GB1") was applied for without priority in the name of EER on 18 July 1994. Patents Form 7/77 naming Crawley as the sole inventor of GB1 was filed on 27 October 1995. A second GB patent application 9423327.7 (hereafter "GB2") was applied for on 18 November 1994 also without priority and in the name of EER, with Crawley named as inventor on a Form 7/77 filed 21 Feb 1996. GB1 was published under number GB2291419 A on 24 January 1996, while GB2 was published under number GB2295147 A on 22 May 1996. An assignment of GB1 in favour of the other co-referrer Victor Bennett (hereafter "Bennett") was registered on 11 November 1997 and a patent was granted in that name on 13 May 1998.

4. GB2 was abandoned before grant but formed the basis for a joint priority claim, along with GB1, for an application under the Patent Co-operation Treaty (No. PCT/GB 95/01686) (hereafter "the PCT application") filed on 18 July 1995 in the name of EER and which was published under number WO 96/02373 A1 on 1 February 1996. On the basis of an assignment dated 6 December 1996, a notification of change of applicant in favour of Crawley was registered by the International Bureau and issued on 3 January 1997. The PCT application as published designates many different states either directly or via regional patents. However only the applications before the following offices are relevant for the purposes of these proceedings: United States (US 08/776039), Australia (AU 29855/95) and the European Patent Office (including EP(UK)) (EP 95925904.5 (publication No. EP775047)). No patents have yet issued on the basis of any of these applications.

5. Proceedings were started with the filing of applications under sections 12 and 13 by Bennett and Kemp on 3 February 1998. A counterstatement was filed by Crawley on 27 April 1998. In summary, the Comptroller has been asked to decide as follows:

- for GB1, the sole inventor is Kemp as opposed to Crawley;
- for GB2 and the PCT application, Kemp and Crawley are joint inventors, as opposed to Crawley being sole inventor;
- the 6 December 1996 assignment of the PCT application from EER to Crawley was invalid and should not have been registered by the International Bureau (and in consequence the PCT application should have stood in the name of EER when it entered the national and regional phases);
- in consequence of a subsequent assignment of EER's assets to Bennett, the Australian and EP applications should now stand in the name of Bennett; and
- the US application should stand in the name of Bennett because of EER's equitable right in the US designation of the PCT application.

6. Evidence rounds followed in the usual way. The evidence is summarised below:

Referrers' evidence in chief

Affidavit of Thomas Kemp and 11 exhibits

Affidavit of Henry Flock

Affidavit of James O'Connor

Second affidavit of James O'Connor and 2 exhibits

Affidavit of John Cowall and 3 exhibits

Affidavit of Simon Mayes

Affidavit of John Turner

Affidavit of Douglas Johnstone and 2 exhibits

Opponent's evidence in chief

Affidavit of Donald Crawley and approximately 50 attachments (separately exhibited with Mr Crawley's third affidavit)

Affidavit of Ronald Pettitt

Affidavit of John Bowett

Affidavit of Lesley Teasdale

Affidavit of John Cowell

Second affidavit of Donald Crawley and 5 attachments (separately exhibited with Mr Crawley's third affidavit)

Third affidavit of Donald Crawley and exhibit (see above)

Referrers' evidence in reply

Second affidavit of Thomas Kemp and exhibit

Third affidavit of James O'Connor and 2 exhibits

Affidavit of Rupert Quail and exhibit

Second affidavit of Henry Flock

Affidavit of Victor Bennett and exhibit (17 documents)

7. A meeting took place at the Patent Office on 6 July 1999 at which the parties inspected originals of documents referred to in evidence by the respective sides.

8. The parties came before me at a hearing on 19 July 1999. Mr T Mitcheson instructed by Messrs Baron & Warren appeared on behalf of the referrers, while Mr Crawley represented himself.

Further evidence

9. By way of preliminary matters, there were requests to introduce further evidence. My decisions on these matters are summarised below.

10. The referrers had submitted by letter dated 8 July 1999 a further affidavit of Victor Bennett and two exhibits comprising (a) a copy of a document headed "UNDERTAKING" signed by Crawley and dated 4 July 1995 which comprises an acknowledgement of the contribution of £350,000 made by Flock to EER and an undertaking to settle the debt as soon as funds are available ; and (b) a copy of a confirmatory assignment dated 18 June 1998 of any residual rights in the patents from Kemp and EER (in liquidation) to Bennett. The former was stated only just to have come to light, while the latter was stated merely to be by way of clarification of one point at issue. At the hearing I admitted the affidavit and the first exhibit but declined to admit the confirmatory assignment since, by virtue of its late date, it could not be relevant to the facts at issue in this case.

11. Shortly before the hearing copies of further documents had been submitted by the referrers. These comprised (i) a letter from Sorsky's (the liquidators of EER) to D Johnstone (the referrers' agent) dated 9 July 1999, (ii) a copy of an assignment of patent and related rights dated 6 December 1996 (iii) a copy of a letter from Henry Flock to D R Crawley on EER headed paper dated 25 March 1996 about patent and other rights; (iv) a copy of a supplementary memorandum to an assignment of the assets of EER, including the PCT application, to Bennett; and (v) a further letter from Harold Sorsky dated 14 July 1999 stating that the assignment and letter (items (ii) and (iii)) were sent to him by Braby and Waller acting for Crawley on 13 August 1997. In arguing for their admission, Mr Mitcheson said that these documents serve to clarify the provenance of key documents already submitted in evidence, namely the assignment of 6 December 1996 and the Flock letter of 25 March 1996. I admitted these documents.

12. At the beginning of the hearing Mr Mitcheson sought to introduce two further documents which had been obtained from Mr Votier at Carpmaels and Ransford (the agents who handled the original applications). The first was a copy of the first page of a letter dated 9 August 1994 from Carpmaels and Ransford to EER Ltd for the attention of Crawley, asking for confirmation of the

inventorship details relating to the application GB1. At the bottom of the single sheet the names and addresses of Crawley and Kemp are both written in manuscript. The second document purports to be a letter dated 19 December 1996 covering an assignment (accepted by Mr Crawley to be the December 1996 assignment) which had been signed and re-witnessed. Mr Crawley did not question the authenticity of the originals of which these were copies, and I admitted them.

13. During the hearing my attention was drawn to certain other items of additional material. I have referred to these as appropriate in the course of my decision below. I formally admitted as evidence (i) a letter dated 10 April 1997 from Crawley to JDL Accountants and Consultants Limited on EER headed paper confirming figures for the year end accounts 30 April 1996 and indicating *inter alia* sums loaned to the company during the year by Crawley and Flock, which document was introduced in the course of cross-examination of Mr Crawley; and (ii) an annotated version of a letter of 3 October 1994 from Flock to Crawley, which was put to Mr Mayes in the course of cross-examination.

Attendance of witnesses for cross-examination

14. The referrers had requested cross-examination of all the respondent's witnesses. However, Mr Crawley had been unable to give assurances as to their attendance, and orders requiring their attendance had consequently been issued on 21 May 1999.

15. Mr Crawley had requested cross-examination of Thomas Kemp, Henry Flock, Simon Mayes, Victor Bennett and James O'Connor. The referrers confirmed by fax dated 9 July 1999 that all would attend save Henry Flock, who, it was stated, had been hospitalised pending possible surgery. Mr Crawley agreed that the hearing could proceed without the availability of Mr Flock for cross-examination.

16. At the hearing, two of Crawley's witnesses, Pettitt and Cowell, failed to appear. The reason cited in the case of Pettitt was that he was on holiday and I had no hesitation in ordering his evidence to be struck out. This was not opposed by Crawley. In the case of Cowell however, the situation was somewhat more complex. Mr Crawley submitted to me that Cowell was an alcoholic undergoing rehabilitation and he could not be traced. No corroborative evidence of this was offered. I should note here that Cowell had also submitted two contradictory affidavits, one in support of each side's case. It was submitted to me by Mr Mitcheson on behalf of the referrers, that I should strike out Cowell's evidence on behalf of Crawley, but allow it

to stand on behalf of the referrers on the ground that Crawley had not sought cross-examination of that evidence.

17. On the basis of these submissions, I decided to strike out Cowell's evidence on behalf of Crawley, but provisionally admitted it on behalf of the referrers. Having now considered the matter fully I think that this must be right. I appreciate that this may appear hard to Mr Crawley, who quite possibly assumed that it was not necessary for him separately to request cross-examination of Cowell in view of the fact that he had already been ordered to appear by the time Crawley made his own request in July 1999. However, although I cannot consider the contents of Cowell's inadmissible affidavit, I can in deciding how much evidential weight to accord to the evidence that I *have* admitted, take into account the surrounding circumstances, including the fact that he was ordered to attend and failed to do so.

The patents

18. Both families of patent applications describe processes involving shearing waste plastic to form particles which are then mixed with particulate filler and heated to form a mixture that can be moulded or otherwise worked to make useful products eg constructional materials. Alternatively the process can be used to render noxious or dangerous waste (eg hospital waste) suitable for disposal in landfills.

19. The main claims of GB1 as granted read as follows:

1. A method for manufacturing a multi-purpose building material from domestic and/or industrial waste material comprising:

providing waste material having a plastics material content between 20% and 65% (w/w);

shearing the waste material to particles of at most 50mm in diameter;

charging the particulate waste and a particulate filler to a mixer;

heating and maintaining the temperature of the mixture between 120EC and 200EC during mixing;

mixing until a uniform composition is obtained; and

forming the uniform composition into a final product.

17. A multi-purpose building material obtained by the method according to any one of the preceding claims wherein the multi-purpose material is resistant to degradation, resistant to acidic and alkaline conditions, heat resistant, soundproof, strong and has a maximum porosity value of 0.81%.

18. The use of the multi-purpose building material according to claim 17 as a membrane for landfills, building blocks, foundations for buildings, roof tiles, fence posts and panels, paving slabs and tiles, water gulleys, playground surfaces, roads and paths, pipes, pushing walls and floors for waste transfer stations, floors for car parks and garage forecourts, groins for land and beach reclamation, tetrapods and acropods for coastal defences and blocks for sea walls and marine walls.

19. A production plant for performing the method of any one of claims 1 to 16 comprising:
means for shearing the waste material to particles of at most 50 mm in diameter;
means for storing particulate filler and the particulate waste;
a mixer for mixing the particulate waste and the particulate filler;
means for charging the particulate waste and the particulate filler into the mixer;
means for heating and maintaining the temperature of the mixture in the mixer at between 120EC and 200EC during the mixing until a uniform composition is obtained;
and
means for forming the uniform composition into a final product.

20. The subject matter of GB2 is incorporated with that of GB1 in the PCT application and involves the additional step of introducing the hot mixture into a used tyre and allowing it to set. It is said that the product can be disposed of in landfill or used as a constructional material. The claims of the published PCT application read as follows:

1. A method for manufacturing a multi-purpose building material from domestic and/or industrial waste material comprising:
providing waste material having a plastics material content between 20% and 65% (w/w);
shearing the waste material to particles of at most about 50 mm in diameter;
charging the particulate waste and a particulate filler to a mixer;
heating and maintaining the temperature of the mixture between 120EC and 200EC during mixing;
mixing until a uniform composition is obtained; and
forming the uniform composition into a final product.

17. A multi-purpose building material obtainable by the method according to any one of the preceding claims; wherein the multi-purpose material is resistant to degradation' resistant to acidic and alkaline conditions, heat resistant, sound proof, strong and has a maximum porosity value of 0.81%.

18. The use of the multi-purpose building material according to claim 17 as a membrane for landfills, building blocks, foundations for buildings, roof tiles, fence posts and panels, paving slabs and tiles, water gulleys, playground surfaces, roads and paths, pipes, pushing walls and floors for waste transfer stations, floors for car parks and garage forecourts, groins for land and beach reclamation, tetrapods and acropods for coastal defences and blocks for sea walls and marine walls.

19. A method for transforming used tyres, wherein the uniform composition prepared by the method of any one of claims 1 to 16, is introduced into a tyre, and allowed to solidify therein so as to form a solid disc of waste material.

20. The method of claim 19 wherein the transformed tyre is disposed of in landfills.

21. The use of the tyre transformed by the method of claim 19 in the production of articles of construction.

22. The use of claim 20, wherein the article of construction is a column.

23. A method for forming a column suitable for building applications comprising:
superimposing a plurality of tyres, one on another;
pouring the uniform composition prepared by the method of any one of claims 1 to 16 into the central hollow formed by the superimposed tyres, until the tyres are filled with the composition; and
allowing the composition to set.

24. A production plant for performing the method of any one of claims 1 to 16, comprising:
means for storing the product components; heating and mixing means;
means for feeding the components to the heating and mixing means; and
means for forming a final product.

26. A production plant according to claim 24 or claim 25, additionally comprising means for introducing the uniform composition prepared by the method of any one of claims 1 to 16, into a tyre or the hollow formed by a stack of superimposed tyres.

Summary of agreed facts and points in dispute

21. Messrs Kemp and Crawley were friends considerably before they ever discussed the development of these inventions. Crawley was an entrepreneur, having been involved in a number of ventures including recycling of scrap materials of various sorts. He and members of his family were made personally bankrupt for very large sums when one of his earlier companies collapsed and the bankruptcy order was still in being against him at the start of the period relevant to these proceedings.

22. Kemp seems to have been more of a technical man, although the extent of his contribution to this invention is of course one of the central issues in dispute. His hobby was making small scale bronze castings using the "lost wax" process, and it is alleged that he used some of his casting equipment in experimental work in connection with the invention.

23. Around March 1994 and possibly earlier, Kemp and Crawley discussed ideas about how to treat the large quantities of waste plastics materials which were building up on the Continent. It was said that there was the availability of plastics from Germany at £200 a tonne, but it could be brought into this country only if you could be seen to be using it in a process. It is not disputed that at this time it was Crawley who first suggested to Kemp that it might be possible to combine waste plastic and filler for recycling.

24. The two men discussed developing to a commercial scale the process embodied in what was to become patent application GB1. In this context, Kemp introduced Henry Flock as a potential investor, and the company (EER) was formed by Flock, Kemp and Crawley in April 1994 with this as its objective. Crawley held the majority of shares in EER, but Kemp was the sole director (Crawley being disqualified from directorship by reason of his bankruptcy).

25. From about March 1994 tests were carried out, initially in an adapted cement mixer at premises already occupied by another company with which Crawley was associated at Victoria Deep Water Terminal in South-East London (hereafter "VDWT"). Later a hydraulic baling press was obtained on loan from a German company and a second-hand asphalt mixer was procured and adapted for trials of the process. Samples of composite material were successfully produced and plans were made for a full-scale plant with a throughput of up to 50 tonnes/hr.

26. There is no agreement over who directed the test work at VDWT or who made the samples and this is one of the important areas of conflict in the evidence.

27. Kemp and Crawley visited the agent Mr David Votier at Carpmaels & Ransford to discuss making a patent application on 1 July 1994. Following this meeting, the application for GB1 was filed in the name of EER on 18 July. The question of inventorship was not settled at the 1 July meeting and Mr Votier wrote to Crawley at EER on 9 August asking for full details of each inventor and the derivation of EER's entitlement to the invention. A fax was sent back to Carpmaels comprising the first page of their letter annotated in what Mr Crawley has accepted is his own handwriting with the names and addresses of himself and Kemp as joint inventors. There was a subsequent telephone conversation between the agent's office and Crawley to clarify a mistake in the address given for Kemp. Most subsequent contact between EER and the agents appears to have been via Crawley alone, and some time between August 1994 and 27 October 1995 when the statement of inventorship was filed at the Patent Office, instructions were presumably given to Carpmaels that Kemp was not to be named in the application as an inventor. Accordingly the application proceeded with Crawley named as the sole inventor.

28. Samples of product were produced over this period and some were sent for testing by an independent body (AEA). Correspondence was handled by Crawley, although Crawley and Kemp both met with AEA personnel.

29. Following the discharge of Crawley's bankruptcy, he was registered at Companies House as a director of EER with effect from 1 August 1994. The form naming him as a new director was also signed by him on behalf of the company.

30. In early November 1994, Crawley had the idea of using the product of GB1 in conjunction with used vehicle tyres. His involvement in this invention is not in dispute. This became patent application GB2, filed on 18 November 1994 on Crawley's instructions, in the name of EER with Crawley named as inventor. The PCT application claiming priority from GB1 and GB2 was filed on 18 July 1995 in the name of EER.

31. EER had to vacate VDWT early in 1995. At around the same time, the company obtained offices in Berkeley Square, funded at least initially by Flock. Flock was nominated as a director of EER in a form dated 17 February 1995 and subsequently filed at Companies House. In similar manner to Crawley's nomination, the form naming Flock as a new director was also signed by Flock on behalf of the company.

32. The second referrer, Victor Bennett, came on the scene as a potential investor in late 1995 when further funds were needed to scale up to full-sized plant.

33. A letter dated 25 March 1996 purportedly from Flock to Crawley states the basis on which the patent applications in suit were filed and held. To quote:

"We [presumably EER] hereby acknowledge that we have filed in our name but on your [Crawley's] behalf the following patent applications:

[list including GB1, GB2 and the PCT].

"We thus have been acting strictly as your nominee and have no beneficial interest whatsoever in the patent and patent applications listed hereabove. "

34. During 1996 new premises at Sharpness in Gloucestershire were occupied and installation proceeded of large scale plant. Crawley was seeking further investment and at least some of the funding appears to have been sourced from Belgian investors introduced by him (Schöler, Wouters and Traugott, and their company ERC). This deal was arranged without the knowledge or involvement of Kemp.

35. Key events took place around the beginning of December 1996. There is a document dated 6 December 1996 which purports to be an assignment executed under the seal of the company of all rights in the PCT and related applications from EER to Crawley. Crawley subsequently relied on this assignment to register himself with the relevant international authorities as the proprietor of the PCT.

36. On the face of it the assignment (the original of which was produced to me at the hearing) bears the signature of Henry Flock as a director of EER and that of Crawley's daughter, Lee Hodgson, in the capacity as secretary. The signature of Crawley himself appears in the capacity of assignee, witnessed twice by a Mr Jim O'Connor, who was an employee of EER at Sharpness. The precise history of this document has been one of the important points at issue in these proceedings, but it is not in dispute between the parties that at least Flock and O'Connor were present together at Sharpness and signed the document, while Crawley's signature was applied at some later time. Mr Crawley also accepted in the course of the proceedings that his daughter was not the company secretary of EER at the time of execution of the assignment. Copies of several versions of this assignment have been filed in evidence some of which are indistinct, and certain of them lack one or more of the signatures.

Discussion of written and oral evidence

Kemp

37. Kemp says in his affidavit that in January or February 1994 he met Crawley to discuss the treatment of plastics. It was in response to these discussions that he developed the process using the heated press and crucible he used for his casting hobby. He shredded feedstock with scissors and determined the parameters which avoided the generation of fumes and which would avoid the need for additives. The funding for these experiments came from Henry Flock.

38. Following the formation of EER in April 1994, Kemp says he continued experiments at VDWT first using a small cement mixer and later with a larger concrete mixer modified by provision of heating means. These modifications were done with the assistance of John Cowell (the husband of Crawley's niece). Following the failure of this plant, Kemp acquired an asphalt mixer to which a controlled heating jacket was fitted, again with the assistance of John Cowell. This apparatus was successful and was used to determine the best temperatures for the mixing process. According to Kemp's affidavit, Crawley had no inventive input into the "works and optimisation experiments". Kemp says he produced samples both at his home and using the equipment at VDWT.

39. Kemp's affidavit goes into detail about the subsequent activities and the relations between the partners and investors in the business. He admits playing little role in the company once it acquired premises in Sharpness and there is little here to shed light on the circumstances immediately surrounding the signing of the 1996 assignment. Kemp himself sought to establish his own operation in Barking for which he obtained a licence from Crawley.

40. On cross-examination, Mr Kemp did not depart from the main thrust of his written evidence, but he did concede that he regarded Crawley as a joint inventor. He said "this was something which we did together but I did most of the work. It was your [Crawley's] initial input and suggestion and it was me who worked out the parameters for it". He reported Crawley as saying that "there were plastics available from Germany at £200 a tonne, but it could only be brought into this country if you can be seen to be using it in a process."

41. On being questioned by myself how he could explain how the 20 shares originally allocated to him had turned into 2, he explained he had been led into it by Crawley and it was said to be a consequence of him being on 'invalidity benefit'.

42. I found Mr Kemp to be a straightforward witness. His evidence has a ring of truth in that he is the only witness to go into significant technical detail about the process, for example explaining how he avoided problems with combustible material. He did not answer very satisfactorily when Mr Crawley asked him why he initially agreed to accept a very small share in the business and why he should have signed restrictive licence documents later if he regarded the invention as his own, but in Kemp's words they were "mates"; Kemp considered Crawley a "friend". It seems to me that he had a significant measure of trust in Crawley and was probably content to let him get on with the business side of things. He may not even have fully understood the significance of what was going on.

Flock

43. Flock states in his affidavit that he was associated with Kemp in 1993 in a clothing recycling business called Aim Recycling. In early 1994 Kemp discussed with Flock his desire to do experiments with plastic waste recycling. He later showed Flock samples of blocks produced in his home workshop. Flock expressed interest in investing in the process and was introduced to Crawley at VDWT.

44. According to Flock's account, Crawley told him that he was involved in importing waste materials from Europe, and that contracts worth "millions of pounds" would be available to anyone who could develop to a large scale a process for mixing these waste materials with waste plastics.

45. Flock says he financed the experiments at VDWT with a modified concrete mixing vehicle. These were not successful, although Kemp continued to produce small samples in his home. Later experiments using a modified asphalt mixer were however successful and a patent was applied for. These experiments were done by Kemp, while Crawley spent much time negotiating contracts.

46. Flock's estimate of his total investment is about £400,000 by the end of 1995, by which time his funds were substantially exhausted, although more investment was still needed. About this time he was introduced to Victor Bennett as a potential investor. He says that Bennett sought confirmation that EER were the sole owners of the patent rights and that Crawley confirmed this to be the case.

47. During 1996, contacts were made by Crawley with further investors, although Flock had no knowledge of the details of any agreements reached.

48. Flock says he trusted Crawley to run the company, and that he (Flock) signed many documents without question. He does not deny that he might have signed the letter to Crawley dated 25 March 1996 [which states that *inter alia* the patents in suit were filed on behalf of Crawley], but states that he has never knowingly signed any document in support of the transfer of EER company assets. Neither does he deny signing the final sheet of the assignment dated 6 December 1996, but states that had he appreciated the significance of the document he would not have signed it.

49. Flock's evidence, while consistent with the referrer's case on inventorship, includes little detail and does not advance their case on this question a great deal. It is however much more directly relevant to the question of the intention of the parties to the assignment. On the face of it, Flock is saying clearly that there was no agreement to assign company assets and this makes him one of the key witnesses. Accordingly, it is extremely unfortunate that Mr Flock, albeit for very understandable reasons, was unable to attend and have his evidence tested on cross-examination.

O'Connor

50. Mr O'Connor's evidence is limited to events which occurred after the company's move to Sharpness. He says in his affidavit that he was in contact with Kemp on several occasions when he delivered samples to the site, and that Kemp was instrumental in getting the plant installed at Sharpness to operate successfully. As regards the signing of the assignment dated 6 December 1996, he states that he was asked by Crawley in person to witness Henry Flock's signature on a single sheet (which he identifies as the last page of the assignment). He further asserts that he signed it only once and there was no signature other than that of Flock present on the sheet when he signed it, and that he did not apply the second signature purportedly of himself which now appears on the assignment.

51. Under relentless cross-examination, O'Connor maintained his account of events. His recollection of the signing of the assignment was very vivid, being able to describe in some detail the setting in the boardroom. He confirmed that there was only a single sheet and that he did not know the true significance of the document; that it was Crawley who asked him to witness Flock's signature, and that Lee Hodgson was not present. He also stated that the company seal had not been applied at the time he signed.

52. In the course of O'Connor's cross-examination, I had sight of the other documents dated 30 November and 1 December 1996 allegedly signed by Crawley at Sharpness and referred to in O'Connor's third affidavit. I did not admit these documents as evidence, but I have noted their existence, which was not challenged by Mr Crawley.

53. In cross-examination, Mr Crawley attempted to make much play of the witnesses' confusion over the date of the meeting at Sharpness at which the 6 December assignment was signed by Flock and O'Connor. However, I see no inconsistency here. Recollections of events are often much clearer than dates, and I have no problem in accepting that there may have been one or more errors made in recounting the exact date of the meeting. I have some difficulty however with the conflicting evidence over Crawley's presence or absence at the meeting. The respective accounts are so clear and contradictory that one or other must be blatant falsehood, yet resolution of this point alone does not clearly advance either party's case. I am left with the unpalatable conclusion that there is some deeper truth that has not emerged in these proceedings. Whatever that may be, there can be no honourable intent behind whichever party has given the false account.

Cowell

54. During March 1994, Cowell says he assisted Kemp in capacity as welder and steel fabricator to make alterations to a concrete mixing machine. The machine did not work well and Kemp had to make samples for Crawley at his home. Later, an asphalt mixer was obtained and Cowell made alterations to it under Kemp's direction. Kemp was happy with this machine which was able to make large blocks of product. In September 1994, Cowell assisted Kemp in setting up and later removing machinery at Crawley's garage in Chislehurst. All the small samples ever produced had been made by Kemp in his home workshop.

55. While admitting this evidence formally as unchallenged, I have accorded it very limited evidential weight bearing in mind the unusual circumstances and that Mr Cowell was ordered and failed to appear for the respondent.

Quail

56. Quail was the solicitor before whom Cowell swore his affidavit of 3 July 1998. He states that Cowell did not appear to be under duress, he read the affidavit before signing and said that he

understood it. This evidence was not challenged by Mr Crawley and I have no reason whatsoever not to take it at face value given the independence of Mr Quail as well as his professional position.

Mayes

57. Simon Mayes's company, JDL Secretarial, was engaged as one of the company secretaries of EER. Mayes also described himself as Henry Flock's a personal friend, accountant and tax advisor. His estimate of Flock's investment in EER comes to about £500,000, which exhausted his resources. He was introduced into the company as a result of Kemp, a former partner of Flock in his prior company 'AIM Recycling'.

58. According to Mayes, no meetings of the directors of EER were convened at any time, nor were any minutes produced. Mayes says he was unaware of any transfer of any interest in the patents to Crawley. Mayes acknowledged that it was a normal practice to file additional director forms signed by the directors themselves and that Companies House did not complain.

59. In cross-examination, Mr Crawley put to Mayes a number of documents, including *inter alia* an annotated version of a letter from Flock to Crawley dated 3 October 1994 which I admitted for the purposes of cross-examination, in an attempt to demonstrate that Crawley was demonstrating concern for Flock and that Flock's investment was less, and Crawley's greater, than Mayes had estimated. Crawley also tried to get Mayes to admit that items of income shown as "shipments received" under Flock's name had come from commission earned by Crawley in another recycling operation, rather than from Flock. Both without success.

60. I was, however, most surprised that Mr Mayes seemed unable to explain some of the entries in the ledgers he had prepared in his own handwriting. I found his testimony of remarkably little assistance one way or the other in resolving issues of the extent of the investment made by Flock and Crawley in the company.

Turner

61. At the relevant time Turner was running a business at Victoria Deep Water Terminal and was present during the period that Crawley had an office and shed there. He says that Crawley discussed with him his ideas for importing waste plastics from Germany, mixing them with

fragmented car waste and make a usable product. Turner's account is that from the early part of 1994, Kemp used to arrive at the site with blocks for Crawley that he had made at home, and that Kemp later proceeded to construct a plant in a shed at VDWT. He says that Kemp was on site daily and gave instructions as to how he wanted the work done. Turner's impression was that Crawley was constantly looking for investors and that Flock was providing Crawley with funds.

62. This account corroborates Kemp's story that he produced samples at home and built the plants at VDWT, but does not clearly identify who determined the parameters of the invention.

Bennett

63. Victor Bennett's affidavit contradicts certain of the points made in Crawley's written evidence. None of this material is directly relevant to the question of inventorship and much of it of only limited relevance to the question of proprietorship. It is however supportive of the referrer's case that the parties could not have intended to assign all rights in the PCT to Crawley for no consideration.

64. In cross-examination, Mr Bennett was a very confident speaker, clearly well used to putting a point of view in a forceful and convincing way. He stood firm under quite aggressive questioning by Mr Crawley. In particular he maintained that he was at Sharpness the day that O'Connor was asked to witness the assignment.

65. Mr Bennett gave the impression of the type of person who would know exactly what he was doing. For this very reason it is quite a leap for me to accept that he either allowed the wool to be pulled over his eyes or knowingly went into a situation in which his investment was put at risk. He says he signed the joint venture agreement dated 17 May 1997 acknowledging Crawley's ownership of the PCT for reasons of expediency and to put right the "wrongs" done previously; while I have no problem in accepting that he might have done such a thing if it had turned out alright, in fact I am being asked to believe that he did so only then to allow it all to slip away without the new arrangements ever coming into force. This version is just about plausible, but does stretch credibility somewhat.

Crawley

66. Unrepresented litigants often have difficulty with the what constitutes *evidence*, as opposed to argument and opinion, and Mr Crawley's written evidence contains considerable amounts of all three. While I do not propose in this decision systematically to unpick Mr Crawley's written submissions, I should make it clear that in coming to my findings of fact, I have given evidential weight only to material which is presented as information within Mr Crawley's own knowledge. I would also comment that Mr Crawley on several occasions suggested that he would be able if necessary to adduce further evidence to prove certain points. In this connection I made it absolutely clear to Mr Crawley that my decision in these proceedings would be final and that he should make sure that he had placed before me all the evidence he considered necessary to prove his case. I gave him several opportunities to reflect on whether there was anything more he wished to add.

67. Crawley's evidence is that he developed the process described in GB1 before November 1993, which is well before his involvement with Kemp. He says that he made a presentation to the directors at the Wismut Mine in Germany on behalf of the company he was then involved with (Greenwich Recycling) on a proposal to treat and render safe for dumping at the mine a large volume of contaminated material by encapsulation. The waste plastics used in the process would be sourced by Greenwich Recycling. Documentary evidence to support this claim is in the form of a fax from Crawley to a Dr Volker Kuntzsch. Although this document is undated, Crawley supports his contention about the date by reference to a copy of a fax from Kuntzsch which asks for the retransmission of a fax previously received from Crawley. The fax from Kuntzsch is signed "Volker" and dated "15.11.93". It does not however refer to the content of the earlier transmission.

68. Crawley says that he developed the invention in his own home by heating in his domestic oven small batches of so-called "shredder light fraction" (a residue material from car fragmentation plants), mixing in plastics, then moulding the mass in a gloved hand. In this way he says he discovered the optimum temperature to heat the material. He says he discussed how to scale this process up with the manager and chief engineer at the Wimpy Hobbs Tarmac Plant.

69. Crawley's account is that he left Greenwich Recycling following a disagreement and proceeded to look for investors with a view to exploiting the invention himself. It was at this time that Thomas Kemp introduced him to Henry Flock, who said he would be prepared to fund the project to completion. Work on the process was undertaken at VDWT and blocks of up to 200kg were produced. Crawley admits that Kemp helped with cutting the blocks to size but asserts that

this was the limit of his involvement, all activities concerning the process being carried out by Crawley's sons and nephew under the personal direction of Crawley.

70. There is a considerable amount of written evidence about subsequent activities and the relations between the partners and investors in the business, including the amount of investment put in by Henry Flock and others, and attempts to establish new companies to exploit the process. Since this all relates to activity after the date when it is beyond doubt that the invention was made, it is not relevant to that question. Certain of this material is however relevant to establishing the intentions and good faith of the parties to the December 1996 assignment, and I shall refer to it below where appropriate.

71. Under cross-examination, Mr Crawley accepted that Thomas Kemp had made some contribution to the invention and that he had made some samples. He accepted that it was he (Crawley) who had written the note to Carpmaels & Ransford naming himself and Kemp as inventors. His explanation of this was that he wanted to recognise the work Kemp had done in cutting the blocks and he had promised him 10% of the patent in return for this.

72. Under very strong questioning Mr Crawley stood firm on his position that the invention had been made in 1993 and was under test at Leeds University at least. However the only documentary evidence he was able to bring in support of this referred to a meeting which had taken place on 17 December 1993 with Dirk European Plastics (Exhibit A to Crawley's first affidavit). Under discussion at this meeting was a possible contract for supply of waste plastic from Germany for recycling and encapsulation of contaminated materials. The document records an opinion that the process under discussion (known as the "EPP" process) was unpatentable "due to prior knowledge" (by which I take to mean want of novelty). When pressed on how this could be the same process as the invention currently in suit, Mr Crawley was unable to give a satisfactory explanation, which leads me to question whether he really understands what the invention is in detail. He is clearly not familiar with the normal process of applying for and prosecuting a patent application, as he seemed to regard it as normal for an applicant who has employed an agent to nevertheless draft the specification himself.

73. Neither was Crawley consistent when questioned over Kemp's share allocation. He was unable to give coherent explanations of the timing of the decision or of why Kemp eventually received 2% of the shares in EER. He told a different story to Kemp himself in the latter respect, which contradicted other parts of his own testimony.

74. As regards the assignment dated 6 December 1996, Crawley strongly held that he was not at Sharpness when the signatures of Flock and O'Connor were applied to this document, and was not able to shed any light on the circumstances surrounding the application of his own signature or that of his daughter. He maintained this position despite being pressed hard on the point.

75. Mr Crawley refused steadfastly to depart from his view of matters. However when challenged on points which were inconsistent with his case, his attempted explanations even of matters which were on the face of it clear were rambling and frankly unconvincing. He admitted being prepared to be less than truthful under some circumstances. For example, in his meeting with potential German investors in 1996, he was prepared to allow them to be misled over the existence of the PCT application. He also admitted signing the document produced to him in cross-examination pertaining to the liquidation of EER, thereby knowingly misrepresenting the extent of his investment in the company. I have to say that none of this persuades me that Mr Crawley is a particularly trustworthy person or a reliable witness.

Bowett

76. Mr Bowett's affidavit is mainly concerned with events in late 1993 and 1994 and he states that Crawley was in 1993 in discussions with the Lindemann company in Germany over using a process for disposing of waste from car shredding plants. He also states that Crawley "produced a large range of samples" of varying sizes and that Kemp produced small circular samples under the guidance of Crawley.

77. Under cross-examination, Bowett came across as trying to be fair and answer to the best of his knowledge. He amplified on his account of the production of the samples, suggesting that Crawley was producing significant samples as early as 1993. However when challenged, he admitted that he was not familiar with the details of the process of the patent in suit and could not therefore say whether the process which had been discussed with the Germans was the one and the same. Moreover as he was unsure about the exact timing of his introduction of Crawley to Carpmaels and Ransford, it is possible that his timing in relation of the production of the samples was similarly incorrect. In summary, I do not doubt Mr Bowett's sincerity, but his evidence, including his views about who conducted the tests and made the samples, seems to be based as much on what Crawley had told him as on his own observations. There is very little here which bears directly on the question of inventorship.

Teasdale

78. According to Ms Teasdale's affidavit, she was with Crawley in 1993 when he conceived the idea of the process. She saw him heat sample batches of particulate substances with plastic in his domestic oven. She visited the site at VDWT and says that Crawley used to give instructions on how to make the "Plasmega" and did quality control by throwing the samples out of the window. She also went with Kemp and Crawley to Geneva in 1994 to discuss setting up companies to hold the Crawley's patents and for Kemp to receive royalties.

79. The referrers chose not to cross-examine Ms Teasdale. Her evidence is significant to the extent that it corroborates Crawley's account that he conducted experiments in his domestic oven, but this much is not denied by the referrers. There is nothing about the parameters which characterise the invention. Nor is there a clear and direct statement that she witnessed Crawley at VDWT actually determining the parameters to be used in the process; she does not place Crawley at the apparatus conducting the tests, and the mere act of giving instructions from his office is equally consistent with the referrer's case that Kemp determined the correct conditions and passed the results to Crawley.

Analysis

80. Having summarised the evidence, it will now be convenient for me to consider the questions of inventorship and ownership separately. It is for the referrers to prove their case on both questions on the balance of probabilities.

Inventorship

The law

81. Section 13(1) grants the inventor the right to be mentioned as such in any patent granted for the invention, while Section 13(3) gives any person the right to apply to the Comptroller effectively to remove the name of an inventor on the grounds that the person named was not so entitled. The provisions of section 13 are as follows:

Section 13(1)

The inventor or joint inventors of an invention shall have a right to be mentioned as such in any patent granted for the invention and shall also have a right to be so mentioned if possible in any published application for a patent for the invention and, if not so mentioned, a right to be so mentioned in accordance with rules in a prescribed document.

Section 13(2)

Unless he has already given the Patent Office the information hereinafter mentioned, an applicant for a patent shall within the prescribed period file with the Patent Office a statement -

- (a) identifying the person or persons whom he believes to be the inventor or inventors; and*
- (b) where the applicant is not the sole inventor or the applicants are not the joint inventors, indicating the derivation of his or their right to be granted the patent;*

and, if he fails to do so, the application shall be taken to be withdrawn.

Section 13(3)

Where a person has been mentioned as sole or joint inventor in pursuance of this section, any other person who alleges that the former ought not to have been so mentioned may at any time apply to the comptroller for a certificate to that effect, and the comptroller may issue such a certificate; and if he does so, he shall accordingly rectify any undistributed copies of the patent and of any documents prescribed for the purposes of subsection (1) above.

82. The remedy available in the event of a finding that a person ought or ought not to have been mentioned as inventor in a GB application includes the issue of corrections to the published specifications and the entry of the amended information in the register. I have no power to direct such action in respect of the international application or foreign national phase applications derived therefrom, but any decision of the comptroller touching on questions of inventorship may be used in support of applications to the relevant authorities in the respective jurisdictions.

83. It is, of course, for the referrers to make their case to my satisfaction. Any doubt in the question will lead to a finding of sole inventorship for Crawley or one of joint inventorship for Kemp and Crawley together. Mr Mitcheson anticipating this drew my attention, *inter alia*, to the

decision in *Henry Bros. V. MOD* [1997] RPC 693 at 706 wherein it was stated that where an invention lies in a combination of elements the inventor is the individual who was responsible for identifying the combination. Thus someone who merely comes up with any one element of the combination is not the inventor.

Discussion

84. As regards inventorship, the only substantive question is who invented GB1. The question of inventorship as regards GB2 will fall naturally once GB1 is resolved, since it is not in dispute that Crawley originated the *improvement* embodied in GB2. Thus, if it is held that Crawley is the sole inventor of GB1, he will also be the sole inventor of GB2. Any other result will lead to the conclusion that Kemp and Crawley are joint inventors of GB2. Thus, what will be necessary will be to identify the invention of GB1 and then to make a finding of fact as to who actually devised it. This will involve resolving the considerable conflicts in the evidence.

85. Mr Mitcheson submitted to me that the main invention is concerned with more than just the concept of combining waste plastics and filler for recycling. This much was already known from the prior art. The referrer's submission was that the essence of the invention was the identification of the conditions suitable to allow such materials to be combined to form a multi-purpose material, and that it was this combination of features that Mr Kemp identified in experiments in his garden workshop around January 1994. Mr Crawley did not address this point directly, but I shall work on the assumption that he disputes this analysis as it was clear from the generality of his remarks that he regarded the concept of the invention as being rather more loosely defined than this.

86. Having considered the arguments and evidence, I have come to the conclusion that the concept of combining waste plastics and filler for recycling was indeed generally known before the beginning of 1994. Claim 1 of GB1 is considerably narrower than this, being concerned with the steps and conditions used in the carrying out of such a process, and there is no suggestion in the specification that the invention is to be construed other than as claimed. On the basis of the foregoing, I therefore find that the present invention is concerned with a method of producing a composite material comprising the steps and conditions as defined in claim 1 of GB1. These steps include the provision of a feedstock having a certain composition; shearing; mixing; heating; and forming.

87. Apart from the main claims of the patent/applications there are several subordinate claims which are concerned with elaborations of one or more of these steps.

88. Crawley's submission is that he devised the main invention in his own kitchen using a domestic oven to heat feedstock mixture and moulding the product with a gloved hand. However in the light of my finding about what the main invention comprises, I cannot accept that **all** the required steps could have been devised in this way. I find particular difficulty in this respect with the steps of *charging ... to a mixer* and *heating and maintaining the temperature ... during mixing*. I have no reason to doubt Mr Crawley's word that he did some work in his own home, but I very much doubt if this could have involved devising the main invention as I have defined it above.

89. Mr Kemp on the other hand did have equipment at his home which could have been used in much more elaborate work. However on the evidence before me I find it much more likely that the work which led to the determination of the detailed parameters necessary to work the invention effectively was done at VDWT during the early part of 1994. In support of this conclusion I would point to the fact that plant was procured and installed on that site specifically for the purpose of carrying out experimental and development work, and I would further note that the referrer's own evidence is that success in producing large blocks was only achieved on the converted asphalt mixer at VDWT, following which the first application was filed.

90. As to Crawley's claim that he presented the invention to Kuntzsch and others in Germany prior to the Spring of 1994, I find the evidence for this assertion extremely weak. The fax relied on by Crawley is undated and there is nothing to clearly link it with the reply from Kuntzsch. Moreover, there is nothing in the fax which provides a clear link with the invention itself. The most that can be drawn from it is that Crawley's company had a process involving encapsulation which was being "approved at several universities". This in itself does not even prove that a workable process had yet been developed.

91. Crawley also alleges that a process for encapsulating contaminated material using plastics waste was already in operation in the North of England by the end of 1993. However I have seen no convincing evidence that such a process, if one existed, was the same as that of the invention. Moreover, if the process had already been worked out, there would seem little justification in spending time and money on small-scale experimental work at VDWT in the early part of 1994. I therefore find that the invention was brought to fruition in the course of the work that was done at VDWT during the early part of 1994.

92. As to the question of who actually did the work of devising the invention, there are serious discrepancies between the accounts of Messrs Kemp and Crawley as regards what happened at VDWT.

93. Having considered the evidence, and in the light of my conclusions about the witnesses' testimonies as set out above, I have come to the conclusion that Mr Kemp probably did attend frequently at VDWT and carry out experimental work on the plant installed there. What has influenced me to reach this conclusion is principally that Kemp was clearly able to discuss the technicalities of the process and was able to corroborate his account. Crawley's response to this was to try to show that it was he who had directed the experiments, but he was not able to produce much *direct* evidence of this.

94. I do however have evidence in the fax of August 1994, in what Mr Crawley has admitted is his own handwriting, that at least at that time he regarded Mr Kemp as a joint inventor. Some time between then and 27 October 1995 when the statement of inventorship was filed in the Patent Office, one can only speculate that fresh instructions were given to the agents that Mr Crawley alone was to be regarded as the inventor. When these matters were put to Mr Crawley in cross-examination he acknowledged that Mr Kemp had made some (albeit minor) contribution. He did not deny that he later changed his view on joint inventorship when he realised that patent law does not recognise degrees of joint inventorship.

95. On the other hand, Mr Kemp admitted from the witness box that Mr Crawley had contributed at least the initial idea of the invention and he regarded him as a co-inventor.

96. While witnesses' opinions as to inventorship *per se* are of course inadmissible as going to the very question I have to answer, their testimonies about the contributions made by the respective parties are highly relevant, and I place considerable importance on the fact that I have here both sides admitting the contributions made by the respective party.

97. Mr Mitcheson laid stress on the fact that prior processes for recycling plastics-containing materials were well known and this basic idea was all that Crawley had provided, the detailed process conditions being worked out later by Kemp. However, when one looks at claim 1 of GB1 it is clear that there is not a lot of process detail inherent in that claim beyond the shearing step and the heating step (to between 120°C and 200°C). The patent itself (at page 5 ll 10-14) indicates that the upper temperature limit is merely set to eliminate toxic emissions. This is not enough to sway me away from the freely acknowledged concession of joint inventorship to one of sole inventorship for Kemp. He has not satisfied the evidential burden.

98. For these reasons I find that this is a case of joint inventorship. I note that this was not a ground specifically pleaded. However, in view of the joint admissions I have heard in open testimony, I believe it is the only sensible decision I can give.

Proprietorship

The Law

99. The right to apply for and be granted a patent is governed by section 7 of the Act. Sub-sections 2 to 4 of that section read:

(2) A patent for an invention may be granted -

(a) primarily to the inventor or joint inventors;

(b) In preference to the foregoing, to any person or persons who, by virtue of any enactment or rule of law, or any foreign law or treaty or international convention, or by virtue of an enforceable term of any agreement entered into with the inventor before the making of the invention, was or were at the time of the making of the invention entitled to the whole of the property in it (other than equitable interests) in the United Kingdom;

(c) in any event, to the successor or successors in title of any person or persons mentioned in paragraph (a) or (b) above or any person so mentioned and the successor or successors in title of another person so mentioned; and to no other person.

(3) In this Act "inventor" in relation to an invention means the actual deviser of the invention and "joint inventor" shall be construed accordingly.

(4) Except so far as the contrary is established, a person who makes an application for a patent shall be taken to be the person who is entitled under subsection (2) above to be granted a patent and two or more persons who make such an application jointly shall be taken to be the persons so entitled.

100. Section 7 sub-section (2) thus makes it clear that an inventor named under a patent is presumed to have the entitlement in it unless there is a overriding enactment, law or agreement, and sub-section (4) establishes a presumption that a person who applies for a patent is the person who is entitled so to do.

101. Section 12 governs disputes over entitlement *inter alia* to PCT applications. Subsection (1) reads as follows:

12. - (1) At any time before a patent is granted for an invention in pursuance of an application made under the law of any country other than the United Kingdom or under any treaty or international convention (whether or not that application has been made) -

(a) any person may refer to the comptroller the question whether he is entitled to be granted (alone or with any other persons) any such patent for that invention or has or would have any right in or under any such patent or an application for such a patent; or

(b) any of two or more co-proprietors of an application for such a patent for that invention may so refer the question whether any right in or under the application should be transferred or granted to any other person;

and the comptroller shall determine the question so far as he is able to and may make such order as he thinks fit to give effect to the determination.

102. According to Section 12(3), the application of Section 12 to EP and international applications is governed by Section 82, the relevant provisions of which are as follows:

82. - (1) The court shall not have jurisdiction to determine a question to which this section applies except in accordance with the following provisions of this section.

(2) Section 12 above shall not confer jurisdiction on the comptroller to determine a question to which this section applies except in accordance with the following provisions of this section.

(3) This section applies to a question arising before the grant of a European patent whether a person has a right to be granted a European patent, or a share in any such patent, and in this section "employer-employee question" means any such question between an employer and an employee, or their successors in title, arising out of an application for a European patent for an invention made by the employee.

(4) The court and the comptroller shall have jurisdiction to determine any question to which this section applies, other than an employer-employee question, if either of the following conditions is satisfied, that is to say -

(a) the applicant has his residence or principal place of business in the United Kingdom; or

(b) the other party claims that the patent should be granted to him and he has his residence or principal place of business in the United Kingdom and the applicant does not have his residence or principal place of business in any of the relevant contracting states;

and also if in either of those cases there is no written evidence that the parties have agreed to submit to the jurisdiction of the competent authority of a relevant contracting state other than the United Kingdom.

Jurisdiction

103. As regards the EP, the Comptroller needs to be satisfied that jurisdiction exists under Section 82 even if this is not contested by the other party. In the present case, the registered address of Crawley is in Belgium. The referrer was warned about this in the Official Letter dated 13 February 1998 but they did not respond. At the hearing I asked Mr Crawley to declare his current address. He did not wish this to be stated in open court, but he submitted it to me in writing and I can confirm that the address he gave was in the UK. I am accordingly satisfied that I do have jurisdiction under Section 82.

104. As regards the US and Australian applications, I was informed that neither application has yet been granted. In the absence of any evidence or information about the relevant provisions in those jurisdictions, the relief available should I find for the referrer will be limited to a declaration of entitlement.

Discussion

105. In the present case there is no dispute over the initial ownership of the patent although I should observe that having held Kemp to be a joint inventor, there is an issue over the original derivation of EER's title (from Crawley as the sole inventor by virtue of his status as an employee). Kemp at the relevant time was a *director* of EER, not an employee. Kemp is however one of the joint referrers, and I am informed that he has signed an instrument dated 18 June 1998 confirming the assignment of any right he might have had in the invention to EER, so I am content to not to disturb the question of EER's ownership of GB1 and GB2 immediately prior to the date of the disputed assignment.

106. The key question to be resolved over ownership is the validity and effect of the assignment dated 6 December 1996 of all rights in the PCT application to Crawley. Mr Mitcheson put it quite succinctly when he said that I had first to decide whether this instrument was legally valid. If I were to find that it is, Mr Crawley will succeed. On the other hand, should I find that the assignment is invalid in law, it could still be held to be effective in equity and I would then need to consider the intentions of the parties. I agree with this analysis and that is how I shall proceed.

107. I shall turn first to the question of the legal validity of the assignment. Mr Mitcheson took me to Section 36A of the Companies Act 1985 which provides that a document can only be executed by a company by the application of its common seal or by the signature of two directors or a director and the secretary. The conditions for the application of the seal are set out in the articles of association of the company and in the present case the articles of EER follow the model articles in the Companies Regulations 1985 which provide that

"The seal shall only be used by the authority of the directors or of a committee of directors authorised by the directors. The directors may determine who shall sign any instrument to which the seal is affixed and unless otherwise so determined it shall be signed by a director and by the secretary or by a second director."

108. Mr Mitcheson submitted to me, and this was not disputed by Mr Crawley, that no special determination was made in the case of EER as to the conditions for application of the seal. I can therefore only conclude that they are the same as for execution of a document other than under the seal, that is upon the signature of two directors or a director and the secretary. The practical outworking of this is that for the assignment to be valid it must have been signed by a director of EER and another director or the company secretary.

109. On the establishment of EER, Kemp was named as the initial and sole director. The names of Flock and Crawley were later registered with Companies House, but the relevant forms were not validated by existing directors. It seems that Companies House procedure does not include checking of information received in such cases, nor is there evidence of any minuted meeting of existing directors or an AGM which made new appointments. Indeed there is no evidence other than the forms themselves that the appointments ever took place. Despite Mayes testimony that this was acceptable to Companies House, it does not square with the requirements of the Companies Act. Under these circumstances I find that there was no correct appointment of either Crawley or Flock as directors of EER.

110. As to the office of secretary, the undisputed evidence is that JDL Secretarial, as represented by Simon Mayes, was the company secretary at the time of the assignment. Mr Crawley's answer to this was that he had the intention to appoint his daughter as secretary, but in the absence of any evidence at all of an actual appointment by the date in question, I cannot accept that she had any authority to act on behalf of the company.

111. The assignment itself is executed under the seal of the company. It is signed on behalf of the company by Flock in the capacity of director and Hodgson in the capacity of secretary. Crawley's signature is present as assignee, his signature *prima facie* being witnessed by

O'Connor. It is most probable from the evidence that at least the last page of this instrument was signed by Flock and O'Connor at Sharpness in early December 1996 before the sixth of the month. Whether or not Crawley was present is disputed, but in any event it is clear from evidence of intermediate versions of this document, copies of which had been in the hands of Sorsky's and the agents, that he did not sign the document at that time. The referrers' unchallenged evidence is that Crawley's daughter was not present and that the seal was not applied until a later date.

112. It follows from my findings above as regards appointments, that the assignment was not signed by any person authorised to act on behalf of the company.

113. It is nevertheless possible under section 92 of the Companies Tables A to F Regulations, for the acts of a person acting as director to be valid even if it is subsequently discovered that there is some defect in their appointment or qualification. In this connection, Mr Mitcheson took me to the judgment of Lord Simon in *Morris v Kanssen* [1946] AC 459 HL at page 470-471 in which it was held under the Companies Act 1929, the relevant provisions of which were substantially the same as those now in force, that this provision cannot be invoked in the situation that there was no appointment at all, as opposed to an appointment in which there is a defect. As Lord Simon summarised, the section and article have been designed as machinery to avoid questions being raised as to the validity of transactions where there has been a slip in the appointment of a director, and cannot be utilized for the purpose of overriding the substantive provisions relating to such an appointment. In the present case, I have found that the appointments of Flock and Crawley as directors and Hodgson as secretary did not take place, and Crawley cannot therefore rely on these provisions.

114. In conclusion, I find the assignment of patent rights dated 6 December 1996 in favour of Crawley to be null and void.

115. I should comment here that Crawley submitted that Kemp had disqualified himself as a director by reason of non-involvement in the company, but I cannot accept this because the act of removing Kemp as a director could only itself have been achieved by a properly constituted meeting, and there is no evidence, indeed no suggestion, that such a meeting took place.

116. Mr Mitcheson pointed out to me how an assignment, even if invalid as to form, might still be relied upon in equity as indicating an intention to assign. To determine this question I have to consider evidence as to the intentions of the parties. However, having held the appointments of Flock and Crawley as directors to be invalid, the only people who could represent the interests of the company would be Kemp and Mayes (as secretary). Since it is accepted that neither had much involvement in the company at the relevant time and neither

signed the assignment, there is very little basis on which I could find that they had intended to assign the patents to Crawley. However, for the sake of completeness I shall consider the situation without reference to who might in law be entitled to represent the company in order to cover the possibility that I might be wrong in holding the appointments of all the officers save Kemp to be invalid.

117. In the following analysis I am bearing in mind that as it was Crawley himself who stood to benefit from a contract with a company of which he was holding himself out as director, he was under an obligation to conduct himself with *a higher than normal standard of propriety*.

118. As I see it, the most important factors in the opponent's favour are *firstly* the manner in which EER was set up presumably with the agreement of all parties with an 80% shareholding for Mr Crawley; *secondly* the letter dated 25 March 1996 and signed by Henry Flock acknowledging Crawley's interest in the patents (it was argued, and I accept, that this document has no legal effect in itself, but it does potentially have substantial evidential weight as to the intentions of the parties at the time it was written); and *thirdly*, the undisputed fact that Flock signed the assignment itself. There are other documents which acknowledge on their face the fact of Crawley's proprietorship, but none of these are as critical as the three events mentioned above.

119. As regards Crawley's initial shareholding, it has been argued that the 80% included substantial provision for further investment. However, even this would leave Crawley with the biggest individual share at 30%. It is clear to me from the evidence that Crawley was seen as the one with the business knowledge and contacts and was able to secure apparently lucrative deals. I find it perfectly plausible that this contribution on its own might have been enough to justify a substantial shareholding. He claimed that despite his bankruptcy, he was providing substantial funds from commission earned on other deals, although I find the evidence for this very flimsy. I have also accepted that he did bring some technical contribution at the very least in the form of knowledge of prior art processes. The important point here is the way Flock and Kemp saw their relationship with Crawley at the time EER was established, rather than any absolute truth as to the financial arrangements, and I am able to accept that from their point of view they might have regarded the shareholding arrangements as reasonable and fully consistent with the notion that they were making substantial contributions themselves.

120. As to the Flock letter, there are question marks over the provenance of this document since there seem to have been two signed copies in existence. I had sight of the original of one which had been printed on the reverse side of EER headed paper bearing the former Berkeley Square address of EER. The other, of which I saw only a copy, was printed on EER headed paper bearing a Woking address. Mr Crawley informed me that the Woking address came to be used

by EER around or soon after the date of the letter. It is plausible that the versions were printed at different times from the same word-processor, or that they were printed at the same time, possibly later than the purported date (the use of the reverse side of old stationery to print a retained copy for filing would be perfectly reasonable). However it is clear from differences in the signatures that *either* they are two different documents, *or* one is a clumsily altered copy of the other. In the absence of satisfactory explanations, either possibility is disturbing. It is again a matter of considerable regret that Mr Flock was not available for cross-examination on his evidence, as he might have been able to cast more light on these matters.

121. The referrers explain Flock's signatures on the letter(s) and the assignment by saying that Flock trusted Crawley and would sign anything. As regards the assignment this is plausible since there is other evidence to the effect that only the last page was presented for signature, and this in a batch of other routine papers (some of which were shown to me in the course of the proceedings but which have not themselves been admitted as evidence). Despite Mr Crawley's submission that a six-year-old child would see to what this related, I see no way that a lay person would even suspect that this represented the final page of a patent assignment document. The letter however is less easy to explain since it is relatively straightforward and on a single sheet, although the inability of Mr Crawley to explain the discrepancies between the versions of this letter does not increase my faith in it as a reliable indicator of Mr Flock's intentions. This is the point with which I find most difficulty, but on balance I am prepared to accept Flock's unchallenged evidence that although he might well have signed this letter, he does not recall doing so and would not have done had he appreciated its significance.

122. For the above reasons I find no justification for holding that the assignment can be relied on in equity.

Other matters

123. Mr Mitcheson made a number of submissions directed at showing why the assignment should be held unenforceable in the event that I find it to be valid as a matter of form. These are based on the premise that Flock did not appreciate what he was being asked to sign and was the subject of undue influence and improper conduct by Crawley. Since I have held the assignment to be invalid, I do not need to comment on these arguments.

124. Much of Mr Crawley's evidence was directed to post-assignment documentation, in particular a joint venture agreement dated 17 May 1997 and an agreement of the same date supplemental thereto. He argued that the other parties involved (particularly Bennett) had thereby acknowledged his personal ownership of the PCT application, and were seeking licences for the protected process.

125. No clear explanation of this came through in either the written evidence or the cross-examination. I suspect that the full truth has not come out into the open.

126. However, given that I have found the previously executed assignment cannot be relied upon either in law or in equity, I do not need to decide upon these issues.

Conclusions and Order

127. In conclusion, I find that

- Mr Kemp ought to be named as joint inventor of GB1, GB2, and the PCT;
- The assignment dated 6 December 1996 [the PCT] to Crawley is invalid and should not have been registered by the International Bureau.

128. Accordingly, I order that the register be rectified to show that the inventors of GB1 and GB2 are Thomas Malcolm Kemp and Donald Roy Crawley and appropriate amendments to the published specifications be issued.

129. As regards the international application and national or regional phase applications derived therefrom, I hereby declare that this final decision of the comptroller may be used in support of applications to the respective authorities in connection with the matters determined herein.

130. I must comment that I have found this to be an entirely unsatisfactory case. Both as regards inventorship and, in particular, as regards proprietorship, I have had the impression of being permitted to glimpse only part of the overall story. I have been greatly handicapped by not hearing the oral testimony of Mr Flock.

Costs

131. I asked for submissions on costs, neither side having raised this matter in their pleadings. Both parties are content for me to follow the normal practice of awarding a sum in accordance with the Comptroller's scale to the winners as a contribution towards their costs.

132. On this basis I would calculate the sum to be £1400. However taking into account the fact that the referrers have only been partially successful in their action on inventorship, I abate this by £400. Accordingly I order that the sum of £1000 be paid to the referrers Victor George Bennett and Thomas Malcolm Kemp by the opponent Donald Roy Crawley.

133. This being a decision on a substantive matter, the period for appeal is six weeks.

Dated this 9th day of September 1999

G M BRIDGES

Divisional Director, acting for the Comptroller

THE PATENT OFFICE