

PATENTS ACT 1977

IN THE MATTER OF applications under Sections 13(1), 13(3) and 37(1) by John Michael Pemberton in respect of Patent No. 2240974 in the name of Monk Construction Ltd

DECISION

1. UK Patent No. 2240974 ("the patent") in the name of Monk Construction Limited was applied for on 12 February 1991 under application number GB9102879.5, claiming a priority date of 12 February 1990. The inventor named was Anthony Bryan Venn. The patent was granted on 19 October 1994.
2. On 10 March 1995, a reference under Section 37(1) and an application under Sections 13 (1) and (3) were filed by John Michael Pemberton (the "referrer") claiming that he is the sole inventor and all rights in the invention which is the subject of the patent are his, and requesting the transfer of the patent to himself. These actions (which were consolidated in December 1995) are opposed by Ferro Monk Systems Limited, the successors in title to Monk and the current proprietors.
3. Matters have progressed rather erratically, with both sides requesting extensions of time at various points which has caused considerable delay. There have been two preliminary decisions concerned with the timetable for filing evidence (one given at a preliminary hearing on 30 August 1996 and the other dated 27 November 1996 made on the basis of the papers on file).
4. Following the normal evidence rounds, the proprietors raised an objection of alleged additional matter not strictly in reply in the referrer's evidence and also made a submission on a question of security for costs. A third preliminary decision made on the basis of the papers on file was issued on 27 May 1997 which settled the security for costs question, while the issue over the referrer's evidence-in-reply was settled by an additional evidence round by agreement of the parties.

5. The evidence comprises:

Referrer's evidence-in-chief (filed 6/3/96 and 4/4/96)

- C Affidavit of J Pemberton and exhibits
- C Affidavits of N Lindley, D Joughin, A Getliffe, D Firth

Opponent's (Proprietors') evidence-in-chief (filed 13/9/96)

- C Statutory declaration of A Venn and exhibits
- C Second Statutory declaration of A Venn

Referrer's evidence-in-reply (filed 10/2/97)

- C Second affidavit of J Pemberton and exhibits
- C Affidavits of F Lord and D Irwin

Opponent's further evidence (filed 18/8/97)

- C Third statutory declaration of A Venn and exhibits
- C Statutory declaration of P A Quinn and drawings
- C Statutory declaration of R Tankard

Referrer's further evidence-in-reply (filed 3/11/97)

- C Statutory declaration of J Pemberton and 5 groups of exhibits
- C Statutory declaration of A Innes and exhibits
- C Statutory declaration of K Kilpatrick and exhibits
- C "Declaration" of E Culman and attachments.

6. The matter finally came before me at a substantive hearing on 21 April 1998. Mr Pemberton appeared for himself, while the current proprietors (who had dismissed their agents in the run-up to the hearing) were represented by Mr A Venn, their Managing Director. As noted above, Mr Venn is also the declared inventor.

7. At the hearing, Mr Venn sought to introduce further evidence in the form of oral testimony by Mr John Beck, who was a resident engineer at Liverpool City Council in the early eighties. Mr

Pemberton did not raise any strong objections and I reluctantly decided to allow the admission of this evidence *de bene esse*.

8. The patent relates to lining watercourses (*eg* underground sewers) with ferrocement, which is a structural material characterized by comprising thin sections of concrete reinforced with steel mesh. In the method described, pre-formed moulded reinforced concrete segments conforming to the profile of the lower part of the sewer are first installed and then the upper part of the sewer is lined *in situ* by applying wet mortar using a hand-held spray gun to at least one layer of steel mesh reinforcement which has been fixed to the upper parts of the tunnel wall and roof. The advantage of the method involving pre-formed lower sections is that it can be used in environments where water cannot be totally excluded (which is normally the case in sewers).

9. The main claims of the granted patent are as follows:

1. A water course lining unit, comprising a preformed section of ferrocement useful for the in-situ lining of the lower part of a water course, the unit being constructed from steel wire mesh reinforcement embedded within at least one layer of aqueous cementitious composition which has been allowed to set, and wherein some of said wire mesh reinforcement is left projecting and thereby standing proud of the preformed section whereby a steel mesh reinforcement panel can be tied into the said lining unit at the mesh reinforcement which is projecting from the section.

6. A method of making a water course lining unit comprising a section of ferrocement useful for the in-situ lining of the lower part of a water course, as defined in anyone of claims 1 to 5, which comprises:

(a) providing an assembly which comprises at least one layer of steel wire mesh and an adjacent backing layer;

(b) spraying over the steel wire mesh at least a first and a second layer in turn of an aqueous cementitious composition;

(c) working into the interstices of the steel wire mesh and against the backing layer aqueous cementitious composition of at least the first layer sprayed on the steel wire mesh,

(d) allowing each layer of aqueous cementitious composition sprayed over the steel wire mesh to dry at least partially before spraying on any next succeeding layer;

(e) troweling over the steel wire mesh aqueous cementitious composition of the or each layer

subsequent to the first layer; and

(f) allowing the final layer of aqueous cementitious composition that is sprayed over the steel wire mesh to set whereby a final layer of cement is formed over said steel wire mesh whilst some of said wire mesh reinforcement is left projecting from the said section.

9. A method of in-situ lining or relining a water course which comprises placing in the lower part of the water course a plurality of water course lining units as claimed in any one of claims 1 to 5, applying and tying steel wire mesh reinforcement panels to the mesh reinforcement which projects from the preformed sections and thereafter spraying at least one layer of aqueous cementitious composition to the said mesh reinforcement and mesh panels.

10. The subject-matter claimed can thus be summarized as follows:

- C claims 1-5 for preformed lining units *per se*;
- C claims 6-8 for methods of making the units of claims 1-5;
- C claims 9-19 for methods of lining or re-lining water courses including use of the units of claims 1-5.

11. Claims 20-23 are "omnibus" claims of the traditional form. Some of the subordinate (especially the method) claims relate to the cement compositions used and details of the spraying apparatus.

12. The referrer, Mr Pemberton, has worked in the field of ferrocement for a number of years. He obtained much of his early knowledge through his association with an American gentleman, Mr Martin E. Iorns, which began in 1981, and whom Mr Pemberton described as his "guru" or father figure in the field of ferrocement. Mr Iorns had originally developed the technology of building laminated ferrocement structures as a means of making boats. Evidence shows that there was a licence agreement dated 15 September 1981 between Mr Pemberton and Mr Iorns according to which Mr Pemberton obtained the exclusive rights to use Mr Iorns' technology and his trade and service marks within the territory of the EEC in return for a 5% royalty. The licence deals with the subject of ownership of improvements to the technology made by either party and includes a "no challenge" clause.

13. Mr Pemberton formed a company, Ferrocement Laminates Limited ("FCL"), and permitted FCL to make use of the Iorns' licence. On the basis of this licensed technology FCL obtained an important contract in 1983 to fabricate large and complex ferrocement structural members known as "leaves" for the prestigious de Menil Museum project in Houston, Texas. As a result of working from early 1984 to late summer of that year on this contract, Mr Pemberton and FCL developed further expertise of their own in the field. Additionally, an affidavit by Mr Iorns (filed as an exhibit to Mr Pemberton's second affidavit) indicates that over the period 1981-1983, Mr Pemberton was considering the use of ferrocement as a material for repairing and relining underground sewers.

14. The current proprietors are the latest in a succession of companies going back well before the filing date of the patent, but a common thread is provided by Mr Venn, the declared inventor, and who was before me at the hearing on behalf of the proprietor. It has not been put to me, and I have no reason to believe, that the changes of proprietor and their predecessors are pertinent to the proceedings at hand, and therefore in the interests of simplicity I shall adopt the shorthand of referring to the various companies involved as "Monk".

15. Mr Venn is an engineer, whose association with what was then A Monk & Co Plc began in 1973. Mr Venn describes the nature of the business of Monk at that time as that of a "contracting company" by which I understand to mean that they carried out work for clients but needed to source their materials from other suppliers. According to Mr Venn's evidence he was personally involved in "all known sewer rehabilitation techniques" over the period 1978-1983 and had detailed technical knowledge of all the systems then in use in the UK for repairing and relining man-entry sewers.

16. The first contract in relation to which Mr Venn had responsibility for day-to-day control was at Smithdown Road in Liverpool. In this contract, on which work started in January 1983, it was proposed to line the sewer with glass-reinforced concrete ("GRC"). This technique, which involves installing prefabricated GRC lining elements in two or more parts, *eg* an upper part for the roof section and a lower or "invert" section, is described in a Water Research Centre technical report dating from September 1978 which was referred to in evidence. I note here in passing that

page 16 of the same report describes a technique in which a pre-cast invert is installed in a sewer, the upper part of the tunnel being lined *in situ* by spraying mortar over a pre-positioned steel reinforcing mesh from a special gun. This is known as a "gunite" process and differs from the spraying process described in the patent by virtue of the mortar mix being supplied to the applicator gun in powder form and only combined with water at the point of spraying. Thus, this basic concept was known to those in the art well before the priority date of the patent.

17. Monk encountered technical problems at Smithdown Road due to bends and varying sections of the sewer. As a result, large gaps were left between adjacent lining sections. Mr Venn's evidence is that as a result of experience gained at Smithdown Road and at another site in Blackpool, he developed in mid-1983 the idea of using lightweight precast GRC inverts coupled with a mesh reinforced upper part sprayed *in situ* using a wet mortar mix. This Mr Venn described as a "premature form of ferrocement". Mr Venn also says that in September 1983, following difficulties with the existing suppliers of GRC inverts, he had asked one of the area buyers at Monks to try to find an alternative source of light weight pre-cast inverts which would meet his technical requirements.

18. In January 1984, Monk were awarded a second contract in Liverpool, this time at Brownlow Hill. For this contract Mr Venn initially proposed to use prefabricated GRC liners for the both invert and upper sections of the sewer. However technical problems coupled with changes in certain regulations forced him to reconsider the use of GRC liners and the process for installation being proposed.

19. It is common ground between the parties that it was at this point in May 1984 that the first contact between Monk and FCL took place. Mr Venn was looking for a way to solve the technical problems at Brownlow Hill whilst FCL had experience in ferrocement. It looked like a promising combination. Mr Venn states that he was aware of ferrocement as a constructional material and had considered its use in sewer renovation before then, but it appears that he had not explicitly specified the procurement of pre-cast sections made of ferrocement for use at Brownlow Hill before the initial discussions with FCL. However I note that another system which involved the *in situ* application of ferrocement to sewer walls and which had been independently developed

and patented by another firm (the "Ruswroe" system) was also under consideration by Monk management earlier in mid-1983.

20. Monk personnel did have some direct contact with Mr Pemberton in this phase, but their main contact with FCL appears to have been through two directors of the company, Dr Alwash and Mr Joughin. Mr Pemberton describes Dr Alwash and Mr Joughin as working under his direction. Following discussions between the companies, tests were carried out in a simulated section of brick sewer at FCL's factory, and it was then agreed that FCL would supply precast ferrocement upper and invert units to Monk for a field trial at Brownlow Hill.

21. The trial at Brownlow Hill actually involved two separate systems. In addition to a trial in which a length of upper section was sprayed *in situ* with ferrocement mortar above a pre-cast ferrocement invert, the opportunity was also taken to test the use of pre-cast ferrocement upper and invert sections together to produce an entirely pre-cast lining section. A letter from FCL to Monk dated 18 July 1984 indicates that FCL were to act as sub-contractors to Monk for the work, and would supply the pre-cast units as well as being responsible for providing the reinforcements and controlling the spraying. Two FCL men were to be sent to the site. The letter also refers to the intention to discuss the "best form of company structure to use for joint operations" should the operation be successful. FCL operatives were involved in the actual work underground.

22. Discussions and preparations for the trial continued during July and August 1984, and it was not until early September 1984 that the trial itself was started.

23. Shortly following the Brownlow Hill trial, an article appeared in the November 1984 edition of *Construction News* which suggested that FCL had conducted the work and referred to their "patented laminating technique". Mr Pemberton, who had co-operated with the journalist who wrote the article, accepts that this was inaccurate and apologized to Monk at the time, but the incident did, according to Mr Venn, sour considerably the relationship between Mr Pemberton and Monk management. I note in passing that the article suggests that the "main breakthrough" was in the manner of application of the mortar using a high velocity spraying process.

24. The Brownlow Hill trial was not regarded as a technical success. Indeed, Liverpool did not allow Monk to tender for work in the city again for a considerable time. However, the parties considered that the techniques and materials used in the trial showed sufficient promise to warrant further investigation.

25. In consequence, soon afterwards a new company known as Ferrocement Sewers and Tunnel ("FST") was formed, the sole purpose of which appears to have been to engage in a joint venture with Monk to develop and commercialize the ferrocement process for sewer renovation. A heads of agreement was signed between FST and Monk in January 1985 which provided for a joint venture to be known as "Ferro-Monk Linings" in which Monk provided finance for the development and marketing of the *in situ* sprayed lining process for the repair/relining of sewers. In return they had exclusive use of the FST *in situ* sprayed lining process in return for a royalty payment. Clause 5 of this agreement significantly states that "*the process will remain the property of [FST]*".

26. FST was on the face of it controlled by Dr Alwash and Mr Joughin only, without Mr Pemberton. According to Mr Venn, this arrangement was made because following the *Construction News* article Monk management refused to have anything further to do with Mr Pemberton personally. Mr Pemberton on the other hand contends that it was to protect the developing business from the poor financial state of FCL (which had been brought about by litigation in the US over the de Menil Museum contract). Mr Pemberton argued strongly that all parties knew that FST was just a front company and that FCL was continuing to work behind the scenes. He did not explain however why if, as he contends, he personally was the driving force behind FCL and FST, he was not named as a director of the latter, and I have some difficulty seeing how his involvement or otherwise would have been relevant to the question of the financial state of FCL *vis-à-vis* the joint venture.

27. A considerable quantity of the evidence relates to activities during this period. A number of invoices suggest that Monk continued to do business with FCL, although Mr Venn dismissed these as oversights and errors. It is nevertheless clear that FST did not do any manufacturing of its own, with FCL continuing to produce the materials, and I find it implausible that Monk were

not aware of this fact. In the final analysis however, I regard this as a side issue which has no great bearing on the questions before me.

28. Contracts were secured and publicity material was produced which promoted the tunnel renovation services offered by the joint venture. Certain of these documents clearly show the use of pre-cast reinforced concrete inverts and sprayed upper sections. FCL's financial problems continued however and the company was liquidated in April 1986. Although by some accounts this was a contingency for which the formation of FST was supposed to have provided, the demise of FCL in fact left the joint venture with no effective supplier. Dr Alwash, on whose expertise the joint venture was heavily dependent, left the country in a hurry at this point for reasons that are wholly obscure to me and about which the parties have conflicting views.

29. In order to ensure a continued supply of pre-cast liners for the sewer renovation contracts which Ferro-Monk had been awarded, Mr Venn established a new production facility at the premises of Monk in August 1986, initially with help from some ex-employees of FCL. Subsequently Monk continued with the business on its own. As I have noted, the priority application upon which the patent is based was filed considerably later than these events, on 12 February 1990.

30. I shall now consider the legal provisions governing this situation. 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.

31. 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 (3) provides that the "inventor" is the person who actually devised the invention. Subsection (4) establishes a presumption that a person who applies for a patent is the person who is entitled so to do.

32. The right to be named as inventor and provisions governing disputes over inventorship are set out in section 13 of the Act, sub-sections (1) and (3) of which read:

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.

(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.

33. The resolution of disputes over proprietorship of a granted patent is a matter related to that of inventorship but is nevertheless distinct, and is governed by section 37(1) which reads:

37. - (1) *After a patent has been granted for an invention any person having or claiming a proprietary interest in or under the patent may refer to the comptroller the question -*

- (a) *who is or are the true proprietor or proprietors of the patent,*
- (b) *whether the patent should have been granted to the person or persons to whom it was granted, or*
- (c) *whether any right in or under the patent should be transferred or granted to any other person or persons;*

and the comptroller shall determine the question and make such order as he thinks fit to give effect to the determination.

34. In this case where Mr Pemberton is claiming to be both the sole inventor and the true proprietor of the patent, the onus is on him therefore to overturn the presumptions that Mr Venn is the inventor and Monk is entitled to the patent. The standard of proof required is the balance of probabilities.

35. The issue I need initially to determine is that of inventorship. This I would break down into two parts as follows:

- (a) What are the features which define the invention?
- (b) Who devised those features?

36. Having carefully considered the claims and description, I am of the opinion that the invention in its broadest sense is a process which includes at least the following key elements:

- C a pre-cast invert section of ferrocement with mesh reinforcement projecting
- C the invert being installed in the lower part of an underground water course
- C the upper part of the water course having fixed thereto a mesh reinforcement panel
- C the application of wet ferrocement mortar to the mesh panel *in situ*

A preferred but not essential feature is that the mortar is applied by spraying.

37. I am aware that not all these elements are literally present in claim 1 which relates to an invert *per se*. However the granted patent includes both method and apparatus claims and I consider the method to be so intimately bound up with the construction of the claimed article that I feel

justified in finding the invention to be concerned with the combination of these features. Indeed, having had the benefit of hearing the oral submissions of Messrs Venn and Pemberton, I am inclined to the opinion that the true invention may even go beyond this combination *per se* to embrace also the know-how which made the use of ferrocement in sewer lining applications technically and practically feasible, *inter alia* by solving the existing misting caused by rebound of spray, of pumping the slurry long distances and of providing spray apparatus suitable for use in very restricted confines. This would be consistent with the suggestion that I have earlier noted in the Construction News article.

38. At this point I feel that I must make a comment to the effect that, during the course of these proceedings, I have been presented with evidence which shows, *prima facie*, that the invention at least as broadly claimed in the granted patent was in use before the priority date of the patent. However, the conditions and date of such prior use were not issues argued before me or on which I have to find in this action, nor, in the context of this case, does the validity or otherwise of the granted claims affect the inventorship or entitlement issues.

39. In seeking to answer the question who devised the features of the invention, it is evident that there is a good measure of disagreement between Mr Pemberton and Mr Venn about whether or not the invention is a development of the technology originally obtained from Mr Iorns. Mr Venn said several times that he does not know how to carry out Mr Iorns' lamination process and that, in any case, it would not be suitable for use in the confined space of sewers.

40. The technique used to make the de Menil Museum leaves involved the sequential application of separate layers of mortar then mesh to build up the final form. A similar technique is described in Mr Pemberton's UK patent No. 2218543, which was applied for on 28 March 1989 and granted on 19 February 1992. Mr Venn drew a distinction between this and the technique used both in the factory manufacture of the inverts and the *in situ* application of ferrocement to a sewer wall, in which multiple initial layers of mesh have sequential coatings of cement applied until they are fully embedded. A thin surface layer is applied subsequently but apparently this is purely to satisfy water industry requirements about the surface quality and is not structurally significant. Mr Pemberton appeared to accept this distinction but argued that it is irrelevant on the grounds that

he had developed Mr Iorns' technology as used in the de Menil Museum contract to enable the "shooting" of cement through several layers of material in one application. He contended that this was the same technique as used in Monk's patent.

41. Mr Pemberton's own paper "Potential applications of ferrocement/concrete laminates" published as pages 95 - 108 of the Proceedings of the Fifth International Ferrocement Symposium, and referred to in his evidence, states that the use of sprayed ferrocement linings in the field of sewer renovations is derived from laminating technology developed by FCL. This paper was published in 1994, and is presumably coloured by Mr Pemberton's experiences since the time when the parties were collaborating, so I do not find it of assistance to me in resolving this question as such, but I do think it is telling that in page 104 of his paper Mr Pemberton himself admits that the sewer lining systems are not strictly "laminated" in the sense that the leaves in the de Menil Museum project were.

42. I have to say that having considered both sides of the argument, I cannot find that Mr Pemberton's case is established in this regard. The papers before me which are concerned with Mr Iorns' process (and the undisputed derivatives of it) all emphasise the importance of the *lamination* aspect in the sense of building up successive thin layers of material by separately embedding mesh layers in each newly formed cement layer. Although Mr Pemberton claims to have modified this process to correspond to that used in the patent before his association with Monk, I can find nothing to support his assertions or to document exactly what was the modified Iorns' method he claimed to be developed, not even his own earlier patent No. 2218453 to which he particularly drew my attention in this regard. Moreover, the technical problems and engineering solutions involved in production of precision castings and the *in situ* lining of sewers are, it seems to me, likely to be quite different. Indeed if they were not, I would have expected there to have been much more rapid success for the process first tried out at Brownlow Hill. In conclusion, therefore, I find that the invention as I have characterised it above has not been proved to be a direct embodiment or development of Mr Iorns' technology.

43. The above conclusion is a severe setback to Mr Pemberton's claim to inventorship, but it is not conclusive as to the question because of Mr Pemberton's close involvement in FCL at the time

in 1984 - 1986 that the invention was being developed. I therefore need to consider this question further. It is clear from the 1978 Water Research Centre paper that the principle of using prefabricated inverts and an *in situ* applied upper part was known at some indeterminate time prior to the publication of that paper and there is no suggestion that either Mr Venn or Mr Pemberton invented that as such. I also have corroborated evidence from both parties that they each had the idea of a process which involves the application of wet ferrocement mortar to the wall or roof of a sewer before they formed their association. There is no conflict in this evidence which requires resolution by me because the accounts are not mutually exclusive, and I have no reason to doubt either of them. I should note here that the evidence of Mr Beck goes to this question, but I would have come to the same conclusion even in the absence of Mr Beck's testimony.

44. What was then done was to successfully apply these principles in combination to the problem of relining crumbling brickwork sewers of restricted dimensions. It seems clear that Monk and FCL worked on this together, but at what stage success was achieved is unclear. Mr Venn's evidence refers to the spraying system being tested by himself at the premises of FCL but to that system not working in practice on site until further development. It is clear, also, that FCL employees worked at Monk sites and brought their experience and know-how to the project, *eg* in development of the spray-guns and the use thereof. There is little that I can find, however, to relate Mr Pemberton personally to such developmental activities. Only the affidavits of Messrs Irwin and Kilpatrick clearly suggest his personal involvement as regards their training in spraying techniques or mould production, and these are silent regarding the technical nature of what was imparted.

45. In the light of the above, I see very little room for Mr Pemberton's claim to be the sole inventor of (that is the person who devised) the invention claimed in the patent and I have to conclude that Mr Pemberton has not overcome the presumption that the inventor named in this patent is the true one. For the sake of completeness, I also state that I do not see a joint inventorship role as established either.

46. The question of entitlement is distinct from that of inventorship.

47. In circumstances such as this I need to examine the relationship between the parties. The evidence which has the most direct bearing on this point is the heads of agreement between Monk and FST which has a clause seemingly providing that rights in the process would "remain" with FST. However I have some difficulty squaring this with the fact that there is no suggestion from either party that FST ever owned the process. It does appear as if when the parties entered into their agreement they had it in mind to make provision for rights in the process, but in the absence of evidence about the fate of FST or what happened to its assets, I am unable to draw any firm conclusions. I do have Mr Pemberton's assertion that he was in reality the controlling force behind FST and that he had not assigned his rights derived under the Iorns' licence to FST or anybody else, but this is not backed up by the documentary evidence, so I am unable to accord it much weight. Mr Joughin's evidence might have been instructive in this respect, but I not found it very helpful as it consists in the main of no more than an opinion as to the very question I am supposed to answer. The other key player was of course the enigmatic Dr Alwash, from whom we have heard nothing whatsoever.

48. Mr Pemberton has produced evidence of confidentiality undertakings signed by employees of FCL. These demonstrate that the company were aware of the need to protect their intellectual property, but if anything they tend to weaken Mr Pemberton's case because they contrast sharply with the lack of documentary evidence to support his personal claim to proprietorship.

49. On the other hand, certain evidence does seem to suggest that Monk was the senior partner in the venture. Where a spokesman is quoted in published material, it is always Mr Venn, and it was to Monk that the sewer renovation contracts were awarded in the pre-agreement phase. Interestingly, exhibit 7 to the first affidavit of Mr Pemberton states that "while Ferro-Monk Lining is a joint venture between Ferrocement Sewers and Tunnels Limited and A Monk & Co Plc, *all contracts are handled by A Monk & Co*"[emphasis added].

50. This is all very murky water, but of one thing I am clear: that there is nothing here which would lead me to the conclusion, with the necessary degree of certainty, that Mr Pemberton in his personal capacity has any rights whatsoever in the patent.

51. For the sake of completeness I would recall here that Mr Pemberton based his main argument for entitlement on the grounds that the process was covered by his licence from Mr Iorns. In the light of my finding above, this argument falls, but in the event that I am wrong, I confirm that I have considered the licence between Mr Pemberton and Mr Iorns and I can find no clear pointer there which could lead me to the conclusion that ownership of any patent covering a development of Mr Iorns' licensed technology ought to reside with Mr Pemberton. More than this I am not obliged to comment, and I decline to do so.

52. In summary therefore, I find that Mr Pemberton fails in his applications both under sections 13 and 37.

53. Monk have asked for their costs. It is normal for costs in cases such as this to go with the decision, and I therefore have to consider what award is appropriate.

54. In these proceedings, in addition to the substantive hearing there has been one attended preliminary hearing. There were also two other preliminary decisions made on the basis of the papers. The tally for the three preliminary decisions was one to Monk and two to Mr Pemberton (the attended hearing having been found in favour of Monk).

55. Mr Pemberton has been unrepresented throughout, and his understandable lack of knowledge and experience did in my opinion lead directly to an extra evidence round which might have been avoided if he had presented all his evidence at the proper time and in good order. It is nevertheless to Mr Pemberton's credit that he did not stand on his rights and seek to disrupt the proceedings further when Mr Venn on behalf of Monk at the substantive hearing (Monk having dismissed their own agents) sought to introduce new evidence in the form of a "surprise" witness. Moreover Monk themselves even when they were represented did little to smooth the running of proceedings. They were responsible for considerable delays and in my opinion sought to exploit Mr Pemberton's position as an unrepresented referrer. The most blatant example of this was their application for security for costs which I consider had very little merit.

56. For all these reasons I have assessed costs on the basis of the published scale for the substantive hearing, with what I consider to be an appropriate adjustment in Mr Pemberton's favour for the preliminary matters. I have moreover tended to the low end of the scale in assessing costs for preparation and attendance at the hearing, although I have allowed for the fact that Mr Pemberton did require the attendance of a witness for oral examination. I have not made allowance for the attendance of Monk's witness having regard to the circumstances.

57. Taking all this into account I award Ferro Monk Systems Limited the sum of £410 (four hundred and ten pounds) as a contribution toward their costs, and direct that this be paid by the referrer Mr John Michael Pemberton.

58. As a final point, I feel that I must make reference to the fact that a good deal of the written evidence and some of the oral submissions related to an incident which took place in September 1985 at Dean Street, Newcastle. FCL men (Messrs Getliffe and Innes) were underground when a flooding of the sewer they were in occurred, and they were allegedly extremely lucky to escape with their lives. Whilst I cannot see that this issue has any relation to the matters of inventorship or entitlement that were before me, it was clearly one about which Mr Pemberton felt strongly leading to some personal allegations against Mr Venn and Monk, *inter alia* as to whether the incident should have been regarded as a 'reportable' accident. As I indicated at the time, this is not a matter about which I am competent to comment.

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

Dated this 9th day of June 1998

G M BRIDGES

Superintending Examiner, acting for the Comptroller

THE PATENT OFFICE