

PATENTS ACT 1977

IN THE MATTER OF a reference under Section 37(1)
and an application under Section 13(3) by Kevin Bowden
in respect of Patent No. 2270629
in the name of BNOS Electronics Ltd.

INTERIM DECISION

Introduction

1. Patent No GB 2270629 was granted on 1 February 1995. It names BNOS Electronics Ltd ("BNOS") as the patentee and Peter Thomas Dearman, Howard Alfred Buckenham, Kevin Bowden, Andrew Sharpe and Damon Andrew Cookman as inventors. On 25 September 1995 one of the inventors, Mr Kevin Bowden, made a reference to the comptroller under section 37(1), alleging that he was the true proprietor of the patent. On 5 March 1996, he also applied under section 13(3) for a certificate from the comptroller that Messrs Buckenham, Sharpe, Cookman and Dearman ought not to have been mentioned as inventors and that he, Mr Bowden, was the only person entitled to be mentioned as inventor. The two actions have been consolidated.

2. After the usual evidence rounds, the referrer made a request for discovery of documents relating to the events surrounding the making of the invention and the relationship between Mr Bowden and BNOS. Following a preliminary hearing on 8 May 1997 I ordered discovery by the patentee of most of the categories of documents requested. Further evidence was submitted by both sides following discovery, referring to some of the discovered documents. Then, shortly before the substantive hearing was originally due to take place in May 1998, further evidence was filed by the patentee. This resulted in postponement of the hearing to provide an opportunity for the referrer to file further evidence in reply, though in the event none was filed.

3. The matter eventually came before me at a hearing on 16th, 17th and 18th November 1998. At the hearing, Mr Bowden was represented by Mark Vanhegan, instructed by Needham and Grant, and BNOS was represented by Roger Wyand QC instructed by Finers. During the hearing both sides referred to more of the discovered documents. As no objection was taken by either side, these too were admitted as evidence.

Background

4. The invention concerns a breathing apparatus for supplying air or oxygen to a patient in need of emergency resuscitation or the like. Portable resuscitators commonly comprise a "hand-piece", held by the operator, which is attached to a face mask. Air or oxygen is delivered to the face mask through the hand-piece from a separate source such as a gas cylinder. Various alternative mechanisms are provided to control delivery of the gas. These typically include an automatic cycling mechanism to provide on/off delivery. This mode of operation is used to cyclically inflate the lungs of a patient who is not breathing. A manual valve is also generally provided, which is operated by a trigger lever, for example, and allows the person operating the equipment to supply oxygen to the patient under manual control. There may also be an arrangement to enable "demand breathing" which responds by supplying gas when the patient inhales.

5. In prior devices, these control mechanisms were relatively bulky and one or more of them were located and operated separately from the hand piece. The present invention as set out in claim 1 consists in housing together in the hand piece an automatic cycling mechanism, a manual control valve, and a switch-over valve which allows the operator to switch between the cyclic and manual delivery modes. The subsidiary claims relate to further details of the valve arrangements including a twin concentric throttle valve. The concentric valve (as I shall call it for convenience) is used to adjust the volume and cycle time of gas supplied by the automatic cycling system. A resuscitator based on the patent is marketed by BNOS as the "MicroVent".

6. The events in the development of the invention appear to be broadly as follows. Mr

Bowden and Mr Dearman worked on resuscitators for a company called Neotronics Medical Limited ("Neotronics"), Mr Bowden in sales and marketing and Mr Dearman as a design engineer. Mr Dearman left Neotronics and then developed a new automatic cycling circuit. It included the concentric valve, which is of miniature size, and avoided the need for reservoirs, and was thus considerably smaller than the previous arrangements. In the early summer of 1990 he constructed a prototype. He may or may not have offered it to Neotronics to develop the idea - that is disputed - but if he did, they were not interested. Then in July 1990 Mr Bowden also left Neotronics and soon afterwards became engaged in discussion with Mr Dearman about the possibility of developing a resuscitator using Mr Dearman's new circuit located in the hand-piece. It is major point at issue whether it was Mr Dearman's or Mr Bowden's idea to incorporate all three control elements into the hand-piece.

7. Together, they approached BNOS and secured agreement for BNOS to develop and market such a resuscitator. At this stage the other named inventors, who were Mr Buckenham, at that time the technical director and chairman of BNOS, Mr Sharpe, its managing director, and Mr Cookman, an employee of BNOS, became involved in the development of a prototype and then a production version of a resuscitator based on the invention.

8. A GB patent application GB9106960.9 was made in April 1991, and, based on its priority, a Patent Cooperation Treaty ("PCT") application PCT/GB92/00584 from which the present GB patent derives was made in April 1992. The PCT application named BNOS as the applicant and the five individuals as inventors. BNOS asserts that Mr Bowden and the other inventors agreed to the application being made in their names and that there was an agreement under which Mr Bowden received remuneration in the form of a royalty from BNOS, in return for his rights in the patent. Mr Bowden says he did not consent to the patent application being made, and did not enter into any royalty agreement with BNOS, or receive any royalty in respect of the patented resuscitator from them.

9. As well as the present action, there is some other litigation which figures in the evidence. Neotronics were proprietors of patent number GB 2170409 relating to an earlier resuscitator

gas delivery valve. Mr Dearman was the inventor and original proprietor of that patent and assigned it to Neotronics when a company Unimed Ltd ("Unimed"), of which he was a director, was taken over by Neotronics. When BNOS started selling the resuscitator incorporating the invention of the patent in suit (ie the "MicroVent"), Neotronics applied for an interlocutory injunction restraining BNOS and Mr Dearman from doing so, alleging that the MicroVent resuscitator infringed the earlier patent. Part of the evidence in the present case comprises affidavits from that action sworn by Dr Gibbs, who was an employee of Neotronics, and by Mr Buckenham and Mr Dearman. In addition, there is further litigation in which BNOS has brought an action against a distributor of a resuscitator made by a Canadian company, O-Two Systems Inc ("O-Two"), with which Mr Bowden is now associated, for infringement of the present patent.

10. Mr Bowden has made the application and reference and the onus therefore rests in the first instance with him. He has two issues to address. The first is the key point of inventorship, and the second is whether Mr Bowden assigned any rights he might have as inventor to BNOS. I will deal with the question of inventorship first.

Principles of Inventorship

11. One matter of some importance in the present case is the question of what qualifies someone to be classed as an "inventor" in relation to this patent. There is more than one aspect to this. The first is what counts as the "invention" in a patent specification for the purposes of assessing inventorship. Arguments were put forward at different stages of the proceedings as to whether the inventive concept set out in claim 1 of the present patent was in fact the primary invention in respect of which inventorship should be assessed. For example there was discussion in the prior proceedings and at the hearing as to the proper relationship of the invention to the prior art, and the question arose at the hearing, in the light of information that emerged during cross examination, whether the idea of incorporating the three elements into the hand-piece had been in the public domain before the patent application had been made. Nevertheless, at the end of the day it became common ground between the two sides that the invention or inventions must be determined in the context of what was

perceived to be inventive by the applicants at the time of filing their application rather than the actual inventive development judged in the light of the prior art. Mr Vanhegan reinforced this by taking me to *Viziball's Application [1988] RPC 213* where this principle was approved, and giving his view of the underlying policy issue that it would not be desirable to have an inquiry into the relationship of the invention to prior art as part of an entitlement action. Mr Wyand also endorsed this approach. I agree and will adopt the principle set out in *Viziball*.

12. Applying that principle to the present patent, it is also common ground that the primary inventive concept in the patent lies in the idea of incorporating the cyclic mechanism, the manual valve and the switch-over valve together in the hand-piece. This is the concept that is embodied in claim 1 of the patent both as filed and as granted. I therefore consider that I must determine as a primary matter who was the inventor of that concept. As *Viziball* rightly shows, though, there can be an inventive contribution in the aspects covered by the subsidiary claims as well. In a slightly earlier case, *Norris's Application [1988] RPC 159*, this was put more generally when it was held that in entitlement proceedings, all aspects of the invention need to be considered without regard to the precise formulation of the claims. Thus although I will start with the claim 1 concept, I will need to go on and consider everything else that is disclosed.

13. A further question that arises in the present case is whether a person is entitled to be named as an inventor if they made a technical contribution towards the development of what I might loosely call the inventive system but no disclosure of that contribution appears in the specification. For example, is someone entitled to be named as an inventor if:

- C they merely helped construct a prototype to confirm the invention would work, or
- C they developed features incorporated in the product that was eventually put on the market but not disclosed in the patent specification?

When I quizzed Mr Wyand on this at the hearing, he said yes to the first of these and no to the second. I am sure he is right about the second. Development of production models will usually take place after a patent application had been filed, and one could hardly claim to be an inventor of what is in a patent specification on the basis of work done after the specification had been filed. On the first, I am of the view that one would need to look carefully at the facts

of the case and the nature of the person's contribution before reaching a conclusion.

14. A final question that arises is whether a person is entitled to be named as an inventor if they made a non-technical contribution towards the invention, for example, if they helped identify or develop a market for the invention, or if they put the person who devised the idea in touch with someone who was prepared to take it up and pay for a patent application. I believe that, unless there are some exceptional circumstances, the answer must be no. This is consistent with the fact that sections 1 to 4 of the Act clearly treat an "invention" as a technical advance and that section 7(3) defines the "inventor" in relation to an invention as "the actual deviser of the invention". It follows that the "inventor" must be the deviser of the technical advance.

The Witnesses

15. Eight witnesses filed affidavits or statutory declarations in advance and were then cross-examined on their evidence at the hearing. The five named inventors, Mr Bowden, Mr Buckenham, Mr Dearman, Mr Cookman, and Mr Sharpe, gave evidence among other things regarding the making of the invention and the existence or otherwise of an agreement as to patent rights and remuneration between BNOS and Mr Bowden. Mr Gibbs, who was a director at Neotronics at the time the invention was made, and Mr Wardell, who was a co-director with Mr Dearman at Unimed before it was taken over by Neotronics, also gave evidence relevant to the making of the invention. Mr Morton, the patent agent, gave evidence on matters relating to the making of the application.

16. The evidence of the various witnesses is contradictory, and the reliability of the individual witnesses must therefore be an important factor in my decision. I will start with two of the three central witnesses, Mr Bowden and Mr Buckenham. Their evidence is clearly incompatible in many respects. After both had been challenged in cross examination, Mr Wyand invited me to find that Mr Bowden was an unsatisfactory witness, whilst Mr Vanhegan invited me to find that Mr Buckenham was. I regret to say that having examined their written evidence and listened carefully to them in the witness box, I have come to the conclusion that

they are both unsatisfactory witnesses.

17. Taking Mr Bowden first, in the witness box he did not inspire me with confidence. There was nothing spontaneous about his answers. Every one was carefully considered and carefully worded, giving me the impression that after each question he was thinking “is what I am about to say fully consistent with the case I am trying to argue?”, and this impression was reinforced by some convenient lapses of memory on crucial points. However, I have not reached my conclusion that he is unsatisfactory witnesses on this basis alone. Despite his best endeavours, he still did not present a consistent story. I will give some examples. In his first declaration he said that he was unaware that an application for a patent was being made by BNOS. At one point in the declaration he states "BNOS instructed patent agents to make an application which they did without my knowledge" and "I was not consulted in any way about the making of or contents of the application." However at the hearing, Mr Wyand produced a fax from Mr Bowden to BNOS, which Mr Bowden accepted comprised technical notes for the preparation of the patent application, headed "As requested I attach the patent application notes" and including the main patent drawing. In the light of this evidence it is crystal clear he did know about the patent application in advance. On another issue, Mr Bowden maintained at the hearing that he had no recollection of any discussions with Mr Buckenham about a royalty agreement. However, Mr Wyand produced evidence that Mr Bowden had sworn in proceedings before the Canadian Patent Office in 1995 that he had approached BNOS for a royalty in relation to the patented resuscitator. Also in a letter to Mr Buckenham of 4 June 1991, Mr Bowden referred to what was clearly at least an outline agreement on royalty and assignment of patent rights. There were several other inconsistencies which cannot just be attributed to lapses of memory, and in the light of these and his performance in the witness box I have come to the conclusion I can attach very little weight to what Mr Bowden says about the history of events.

18. As for Mr Buckenham, he was equally unconvincing in the witness box and at times gave me the impression that he was using his imagination to make up details as he went along. More importantly, though, his story seems to have been shifting the whole time. To take one example, in his first statutory declaration he asserted that payments of £250 a month to Mr

Bowden were partly for consultancy work and partly as an advance on royalties and in his second statutory declaration he says it was at Mr Bowden's request that the payments included a royalty element. Under cross examination, though, he agreed he had "probably" made no advance royalty payments to Mr Bowden and accepted that in Mr Bowden's mind the payments were all for consultancy. To take another example, in his first statutory declaration he asserts that there was an agreement to pay royalty to Mr Dearman and Mr Bowden for three years. A year later, in a letter to Mr Dearman dated 12 November 1997, he asserted that a period had never been agreed, and yet in the witness box he was again asserting that three years had been agreed. To take a third example, at the hearing Mr Buckenham was adamant that royalties were only due on sales after grant. Shortly before the hearing, though, his instructing solicitors were saying - on the basis of instructions that Mr Buckenham agreed had been received from him - that royalties were due on sales pre-grant and were submitting details of those sales - again from data supplied by Mr Buckenham. I find it difficult to believe this can be attributed to a misunderstanding between Mr Buckenham and his solicitors. These and other similar examples leave me with no confidence in Mr Buckenham's version of events. In truth I think the confusion in Mr Buckenham's evidence may in part have arisen because he was trying to persuade himself that things that had not happened, but perhaps should have done, did actually happen, but whatever the reason for the inconsistencies in his story it does not make him a reliable witness.

19. I now come to the third of the central witnesses, Mr Dearman. In the witness box he struck me as a good, honest witness. Mr Vanhegan subjected him to some challenging cross examination which I am sure would have tripped him up had he been fabricating his story, but his story remained consistent throughout, and I am satisfied it reflected his genuine belief as to what had happened. Unlike Mr Bowden, who is essentially a sales and marketing man, and Mr Buckenham, who is essentially a businessman, Mr Dearman is essentially an engineer, and this came across very clearly in his testimony. For example, whilst he spoke with confidence on technical issues, when asked why he had become a director of a related BNOS company his first reaction was "I am not really too sure, to be honest", and later he admitted he wasn't even sure who the other directors are.

20. The remaining witnesses too all impressed me as straightforward and credible individuals who did their best to recall events to the best of their ability. Further, most, if not all, of them have no obvious axe to grind in the sense that they have no financial interest in the outcome of these proceedings and no strong personal or business links with either of the two central players, Mr Bowden and Mr Buckenham. Their evidence did not always agree, or agree with that of Mr Dearman, but where there was disagreement it was always possible to see a credible reason for the difference.

The making of the invention of claim 1

21. There is no dispute that the idea of incorporating the three elements into the housing was established before Mr Dearman and Mr Bowden approached BNOS, because it is common ground that they brought the idea to BNOS. That immediately means that the other three named inventors, Messrs Buckenham, Sharpe and Cookman, can have played no part in devising the idea of claim 1 because they were not even in the picture until BNOS were approached. The key issue, upon which there is no agreement, is whether it was Mr Dearman or Mr Bowden who first had the idea. It is an issue on which I was presented with extensive argument and evidence.

22. It is common ground that Mr Dearman constructed the miniature automatic cycling circuit in the early summer of 1990. Mr Dearman says he constructed it with the specific intention of fitting it, together with a manual valve, into a hand-piece. Mr Bowden on the other hand says that Mr Dearman constructed it with the intention of fitting it into a separate control unit, using the same configuration as in the existing ERA2000 resuscitator which was at that time under development by Neotronics. Mr Bowden then says that he arranged for Mr Dearman to demonstrate the new circuit to him, and as soon as he saw it, conceived the idea of fitting it together with the other elements into a hand-piece. I have to decide which of these versions is correct. As I have already held Mr Bowden is an unsatisfactory witness, I cannot attach much weight to his own assertions. To support his position, I will have to look for evidence elsewhere. Equally, even though I found Mr Dearman a sound witness, it would be wrong for me to accept what he says without considering whether the other available evidence either

supports or contradicts his version.

23. In support of Mr Dearman's version, Mr Wyand asked me to consider why Mr Dearman should have gone to the trouble of making a miniature valve if he did not have a particular reason for miniaturisation. Dr Gibbs, who as I say struck me as a reliable and competent witness, explained in cross examination that with small valves - and he referred here specifically to those in the ERA2000 valve arrangement, which is larger than the present arrangement - it had proved very difficult to achieve the surface finish and machining tolerances required to make the valves work repeatably within specification from unit to unit. Mr Dearman was aware of these problems since he was the designer of the ERA2000 valve and was involved in its development. It is clear to me that Mr Dearman would have needed some strong motivation to suggest the design of an even smaller unit.

24. In cross examination of Mr Dearman, Mr Vanhegan suggested to him that the new cycling circuit had advantages aside from its small size, namely that the concentric valve provided greater control accuracy over the gas flow than the previous arrangement of the ERA2000, in which the dual valves were linked to operate in concert by cog wheels, and that it was less prone to leakage of gas. Whilst not disagreeing that the new circuit may have had these ancillary advantages, Mr Dearman was emphatic that the main advantage was the small size. Mr Vanhegan argued that it was these other advantages that had motivated Mr Dearman to design the circuit, not the idea of putting the elements into the hand-piece, but I do not find this argument persuasive. If Mr Dearman's motivation for designing the new circuit was simply to improve on the design used in the ERA2000 so as to increase accuracy and reduce leakage, there would have been no reason for him to concern himself with miniaturising the components. Indeed, given the acknowledged difficulties that were arising in manufacturing the existing valves, he would have been much better advised not to do so. Thus whilst Mr Vanhegan is undoubtedly correct to suggest that the new circuit could have been used in a module separate from the hand-piece in the same configuration as in the ERA2000, there would have been no reason to design it for this purpose. The facts point much more convincingly, in my view, to Mr Dearman having conceived the idea of placing the circuit in the hand-piece and designing the new concentric valve to enable this idea to be achieved.

25. Mr Dearman's position was supported by Mr Wardell, his co-director at Unimed. Mr Wardell explained that Unimed had made a resuscitator developed by Mr Wardell and Mr Dearman from a still earlier and much bulkier military unit, and said that the evolution of the resuscitator art was all in the direction of fitting more features into the hand-piece. He said that Mr Dearman had discussed with him on several occasions during 1987 and 1988 the desirability of incorporating a cycling circuit and a manual supply valve into the hand-piece. The idea was never taken up because Unimed did not have the resources to fund a further development. Mr Wardell said he had no doubt that Mr Dearman would have been able to develop suitable pneumatic circuitry if they had decided to go ahead. This evidence again supports Mr Dearman's version of events.

26. There is, though, a passage in Mr Dearman's declaration which Mr Vanhegan urged me to consider since it appears at face value that it may be inconsistent with Mr Wardell's explanation. In it he states that "by 1990" he had realised that a resuscitator with a single hand-piece would be a considerable improvement. Is the reference to "by 1990" consistent with an assertion that he had discussed this idea with Mr Wardell 2 - 3 years previously? I think yes. Mr Wardell and Mr Dearman both gave evidence that their earlier discussions concerned the general idea of a resuscitator with a single hand-piece and there was no real prospect of it reaching fruition until a sufficiently small cycling circuit had been developed, so the idea was merely a concept at that time. Mr Dearman's declaration refers to the events in 1990 during which he developed the specific miniature cycling circuit which would allow the concept to be realised. It seems quite plausible to me that his statement, that by 1990 he had appreciated the benefit of a single handpiece, is a description of his state of mind at the time he set about designing the miniature cycling circuit to do the job rather than an explanation of the date on which the general concept first came to him. I therefore find nothing inconsistent here with Mr Wardell's evidence.

27. Mr Vanhegan, though, argued there was plenty of other evidence that suggested Mr Dearman was not telling the truth. I will start with Mr Dearman's alleged meeting with Dr Gibbs of Neotronics. Mr Dearman says he showed his miniaturised cycling circuit to Dr Gibbs in the Summer of 1990 and disclosed the idea of mounting it together with the manual valve

and changeover switch to him at that meeting. Dr Gibbs confirms that his diary shows they had a meeting, but he cannot recall what was discussed at it. Mr Vanhegan took me to Mr Dearman's evidence in the earlier court hearing in which Neotronics filed for an interlocutory injunction against BNOS and Mr Dearman, to prevent them producing MicroVent resuscitators. Mr Dearman swore an affidavit in that case, in which he analysed the construction of the MicroVent resuscitator and compared it with the Neotronics' patent claims to demonstrate that in his view the MicroVent did not infringe the patent. Mr Vanhegan said that it would have been highly material for Mr Dearman to have explained in that affidavit that he had shown his prototype cycling circuit to Dr Gibbs, since it would have been crucial in the context of a defence against an injunction for Mr Dearman to be able to demonstrate that he had been working on his system for some time, and that he had shown it to Dr Gibbs at an early stage. The fact that he did not do so was evidence that he had, in fact, not disclosed the idea to Dr Gibbs because he had not thought of it at that stage.

28. Having heard Mr Dearman cross examined on this point, I disagree with Mr Vanhegan. Under cross examination, Mr Dearman said he did not include it in his affidavit because at the time he did not think it was relevant. To me that is entirely plausible. The Neotronics patent was concerned with the cyclic valve arrangement, not with what was incorporated in the handset. Mr Dearman's affidavit, was concerned almost exclusively with demonstrating that the cyclic valve used in the MicroVent did not infringe the cyclic valve in the Neotronics patent. The thrust of the affidavit was to demonstrate non-infringement from a technical point of view, and I accept that details of the circumstances surrounding the making of the invention may not have seemed relevant in that context, especially to someone like Mr Dearman who is a technical, not a legal, expert. Further, Mr Dearman said he had not demonstrated the internal mechanism of the cyclic valve to Dr Gibbs at their meeting, and of course the integrated hand-piece, the other feature Mr Dearman says he disclosed to Dr Gibbs, was irrelevant to the Neotronics patent, so there would have been very little Mr Dearman could have said about the meeting that would have been relevant to the case BNOS were making. Consequently I do not consider that one can view the absence from Mr Dearman's affidavit of any mention of him showing the present invention to Dr Gibbs as evidence that he did not do so.

29. Mr Vanhegan also argued that the fact that Mr Dearman had not constructed a prototype of the single hand-piece for Dr Gibbs detracted from the proposition that the single hand-piece was Mr Dearman's idea. I do not agree. If as Mr Dearman has said, it was the miniaturisation of the cycling circuit which was the hurdle he had to overcome, and the placing of the trigger and changeover switch on the hand-piece were known (Mr Dearman stated that the ERA2000 for example had the changeover switch on the hand-piece), then once the miniaturisation of the cycling circuit had been achieved, the rest would follow. Consequently, it would only have been necessary for him to build and demonstrate the new cycling circuit to prove the principle, and the remainder of the exercise could be viewed as routine work.

30. Mr Vanhegan also taxed the witnesses about the statement in paragraph 4 of the counterstatement that " ... the impetus for the derivation of the present invention came from the disadvantages of having a separate module of the form indicated by reference 19 in the specification of WO 90/01965". This relates to the separate module which was responsible for the cyclic delivery of gas in the ERA2000 model. The passage was apparently written by Mr Morton based on the information he had obtained over a period working with Mr Dearman and Mr Buckenham on the MicroVent patents and litigation. Mr Vanhegan suggested this passage was inconsistent with Mr Dearman always having had the idea of placing the three elements in the hand-piece. If that was his motivation, why did he not simply say so rather than represent it as an improvement on a previous patent? Mr Wyand disagreed, saying that the thrust of the passage was not that the impetus to the present invention arose from the disadvantages experienced in developing the ERA2000 system, but rather that the impetus was the disadvantage of having a separate module. It is consistent with this that by working towards a single hand-piece system, Mr Dearman was addressing that disadvantage. I agree with Mr Wyand. I do not believe this passage carries the implication suggested by Mr Vanhegan.

31. More generally, Mr Vanhegan submitted that Mr Dearman had consistently failed to explain in his earlier evidence that his intention was to integrate the elements into the hand-piece. I disagree. His first declaration appears to me to state unequivocally that that was his motivation, and that the hurdle he had to overcome to achieve this was to make the elements

small enough to fit in the hand-piece. He also clearly states that he told Dr Gibbs about the single hand-piece idea. I consider that this does represent a consistent story on Mr Dearman's part.

32. Mr Vanhegan also asked me to consider why, if Mr Dearman had had the idea of integrating the elements into the hand-piece before his meeting with Mr Bowden, did he not take it himself to Mr Buckenham to seek support for development. He argued that Mr Dearman's failure to do so suggests that he had not, in fact, developed the idea prior to his meeting with Mr Bowden. I do not find this argument persuasive either. Mr Dearman had taken his idea to the one person whom he thought might wish to exploit it, Dr Gibbs, and been rejected. From his performance in the witness box, Mr Dearman did not strike me as someone who would, having had one rejection, energetically go around knocking on doors until he found someone who could take the idea on. He is an engineer, not a marketing man. Further, BNOS were not at that stage into the resuscitator market. As I understand it, although Mr Buckenham had previously been involved in resuscitators at Neotronics, his present company BNOS was apparently at that time concerned with telemetry and other electronics products. Thus *prima facie* Mr Dearman would have had no reason to consider going to him. Mr Bowden, on the other hand, was a marketing and sales man. It seems entirely plausible to me that, having been shown what Mr Dearman had done, he would immediately recognise the potential market and think about who he could persuade to take the idea on. What is more, he was actually living in Mr Buckenham's house at the time, so it is hardly surprising that the thought of trying Mr Buckenham might have occurred to Mr Bowden but not Mr Dearman. Consequently, I do not read an adverse implication into Mr Dearman's failure to go to Mr Buckenham himself.

33. As will be clear from what I have said so far, most of Mr Vanhegan's arguments were directed at discrediting Mr Dearman's version of events rather than positively supporting Mr Bowden's. However, he did take me to Mr Cookman's evidence as positive support for Mr Bowden. Mr Cookman said it was his understanding that Mr Bowden's contribution to the invention was the single hand-piece design and Mr Dearman's was the general miniaturisation of the components. Mr Vanhegan submitted that this provided strong support for Mr

Bowden's case. As I have said, I found Mr Cookman to be a reliable witness and I have no doubt he is expressing what he genuinely understood to be the position. However, I am also very aware that his understanding was not based on any first hand knowledge, because by the time he arrived on the scene, BNOS were already working on the MicroVent project. I do not know where his understanding of what had happened prior to that time came from, but it may have been gained by observing the division of labour on the project. For example, Mr Cookman gave evidence that he worked extensively with Mr Bowden, and it is alleged that Mr Bowden worked on integrating the patient valve, and on the hand-piece-to-face-mask adaptor. Thus he may have formed his impression of the origin of the claim 1 idea from the nature of Mr Bowden's involvement in the detailed development process. It is also possible that Mr Bowden conveyed the impression to Mr Cookman that he was the one who had thought of the idea. However, I do not need to speculate. Wherever Mr Cookman got his understanding from, it was certainly second hand and accordingly I do not think his impression of who was responsible for what can be given much weight. Certainly I do not think it is sufficient to overturn the more direct evidence from other sources.

34. I have not mentioned every single argument on the inventorship of claim 1 advanced by Mr Vanhegan, but I have covered all the major ones. I have considered the others, but none of them give me any reason to doubt the conclusion I have reached. In summary, then, I consider that Mr Bowden has failed to make out his case that he was the sole inventor of the inventive concept of claim 1, that is, the idea of integrating the three valve elements into the hand-piece. Indeed, in my judgement the facts point firmly towards Mr Dearman alone having devised not only the cycling circuit but also the concept of claim 1. To be as generous as I can to Mr Bowden, I cannot rule out the possibility that, as he himself says, the moment he saw Mr Dearman's miniaturised concentric valve he thought, or possibly even said, "that would enable us to fit everything in the handset". However, that does not make him the inventor of that concept if, as I have found, that is precisely what was in Mr Dearman's mind in developing such a small valve. All he would have been doing was taking the words out of Mr Dearman's mouth. Mr Bowden's apparent independent inspiration would in that case have been no more than a realisation, prompted by being shown the components, of the concept that Mr Dearman had been working on all along, so could not be said to contribute anything

to the making of the invention.

Contributions to other aspects of the invention

35. I now need to determine whether Messrs Bowden, Buckenham, Sharpe and Cookman made any inventive contribution to other aspects of the invention. To do this, I will look both at what else in the patent specification could be inventive and at what evidence there is for technical contributions by the four of them.

36. The counterstatement says that there are significant inventive features in the subsidiary claims. I think it matters little whether I look at the claims in the application as filed or those in the patent as granted because there are no material differences between them. The only changes were, firstly, the inclusion in claim 1 of a feature originally in claim 6, secondly, the inclusion of a new claim 6, and thirdly, the addition of an omnibus claim 10. I will work on the claims as granted for convenience.

37. Claim 2 simply says the manual control valve is operated by a trigger. That, as I understand it, is conventional, so this claim adds nothing significant to claim 1. Claims 3 to 8 relate to the details of the concentric valve and the rest of the cycling circuit. I accept that these almost certainly contain significant inventive features, but they all relate to the cycling circuit devised by Mr Dearman. There is no evidence to suggest anyone else contributed to these features, and indeed in his first declaration Mr Bowden specifically accepted that the circuit came from Mr Dearman. Claim 9 relates to the provision of a patient assist valve, that is one that allows the cycling circuit to admit gas in response to a patient inhaling. It merely states that such a valve is provided and there is nothing further in the description. From Mr Wardell's evidence it would appear that the provision of such a valve was commonplace at the time, so it is difficult to see any inventive contribution here. That only leaves the omnibus claim and the description, but I cannot see any further technical details within the specification, such as the integration of the regulator and the change-over switch as described with reference to figure 4, or the provision of the pressure relief valve shown in figures 5 and 6, that might be inventive.

38. On the face of it, then, if we take Mr Dearman's contribution out of the specification, there appears to be nothing inventive in what is left and hence nothing which the other four named inventors could claim as their inventive contribution, but to confirm this I will now look at what evidence there is of their technical contributions.

39. BNOS's position has been that Mr Dearman was the primary inventor and that the other four named inventors made equal but relatively minor contributions. The referrer asked during the proceedings leading up to the hearing what features of the subsidiary claims were considered to have been contributed by the BNOS employees, but the proprietor declined to reply. Mr Buckenham explained in his declaration that the individuals were named as inventors because they contributed to the "invention" in the sense of the actual device arrived at, and later says they made inventive contributions to the subject matter of the patent, but there is nothing specific. This lack of specific information is, I believe, very telling. It gives me the impression that no proper consideration was given to who should be named as inventors. Rather, I suspect, Mr Buckenham just decided that the whole team working on the MicroVent project should be named. That is simply too casual an approach. I need to look at the specific input of each person.

40. Nowhere in the written evidence or in what emerged at the hearing can I find the slightest evidence that Mr Buckenham himself made any technical contribution at all. I have already discussed what sort of contribution someone must make to be regarded as an inventor, and concluded *inter alia* that someone who only makes a non-technical contribution does not qualify. With no evidence of any technical contribution from Mr Buckenham, I am quite sure that he does not qualify. I do, though, have some evidence of technical contributions from the other named inventors. In particular, Mr Dearman gave evidence about Mr Bowden's role, and some other information emerged at the hearing concerning Mr Cookman and Mr Bowden's work and a possible contribution from Mr Sharpe.

41. Mr Cookman gave evidence that he had made improvements to certain of the pneumatic circuit elements. I understood from what he said that he personally had made the design changes. The changes were in response to Mr Bowden notifying the team of certain problems,

but nevertheless the improvements had been devised by Mr Cookman. However, none of the improvements about which he gave evidence seems to me to be disclosed in the patent specification itself. In particular, Mr Cookman according to his own evidence was responsible for redesigning the patient assist valve. His redesign appears in the discovered documents, but there is no disclosure in the patent specification of Mr Cookman's version of the valve. The unit shown in the specification is quite schematic, and there is no detailed description of its construction. As far as its construction can be discerned from the patent drawing, it relates to the original version with a spring assisted diaphragm rather than Mr Cookman's redesigned version with no spring. Consequently, following the principles I outlined earlier, I do not consider Mr Cookman can legitimately be named as an inventor in relation to that work. There is no evidence of any other contribution from Mr Cookman.

42. Mr Sharpe gave evidence that he worked on the ergonomics of the hand-piece. That may well be so, but I am unable to identify anything inventive in that regard in the specification. The drawing of the hand-piece shown in the patent specification is not very detailed, and there is no suggestion in the description that there is anything very special about its ergonomics. Indeed, I do not even know if what is shown in the specification is what Mr Sharpe is supposed to have designed.

43. Finally, Mr Dearman gave evidence that Mr Bowden was responsible for incorporating the "patient valve" into the equipment, that is the valve which provides pressure relief when the patient exhales and closes to prevent gas escaping during the delivery phase, and also that he worked on the adaptor connecting the hand-piece to the face mask. However once again there is no disclosure in the specification of any inventive contribution in the provision of these elements. Indeed, going one stage further, at the hearing Mr Vanhegan specifically conceded that Mr Bowden did not claim that there was anything in the subordinate claims that came from him.

44. For completeness, I should add that in my judgement none of the technical features just discussed on which Messrs Cookman, Sharpe and Bowden worked fall into the category of helping construct a prototype to confirm the invention would work. Rather, they fall into the

category of developing the invention into a marketable product.

45. In summary, I am unable to find that any person other than Mr Dearman was responsible for any inventive contribution to the patent. Mr Dearman is therefore the only person entitled to be named as inventor.

46. In finding that Mr Bowden was not an inventor, I make no judgement about his level of involvement in the development of the resuscitator into a commercial product and its marketing and promotion. Indeed, the evidence suggests Mr Bowden did have a significant role in those areas, but that does not make him an inventor, and both sides appear to agree that he was paid consultancy fees for this work. It is even possible that had he not thought of showing it to Mr Buckenham, the invention would never have been exploited. Again, though, that does not make him an inventor. It merely makes him a sort of innovation broker. Indeed, it may well be that it was essentially for this role that the payment of royalty to him was being discussed.

Entitlement to the patent

47. I must now move on to the second issue before me, that is, is Mr Bowden entitled to the rights in the patent? In principle, I can dispose of this very briefly indeed. Mr Bowden's claim to entitlement rests on the presumption that he is the (or at least an) inventor. Having found that Mr Bowden is not an inventor, his claim to entitlement collapses and that is the end of the matter.

48. I am aware, though, that roughly half the evidence and half the hearing was taken up with the question of Mr Bowden's contractual relationship with BNOS. Whilst strictly I do not need to make any finding on this, I will very briefly, without going into detail, consider the conclusion I would have reached had this still been a material issue before me. That should mean that if I should be found on any appeal to have been wrong in respect of Mr Bowden's claim to inventorship, it will not be necessary to re-hear this aspect of the case.

49. It is common ground that Mr Bowden was not employed by BNOS, notwithstanding a statement to the contrary filed in the Patent Office at an earlier stage. It follows from the wording of section 7 of the Act that if he was an inventor, he has rights in the patent unless he has assigned those rights to someone else - and in practice, that means to BNOS. It is common ground that there is no formal written agreement or assignment of those rights. Nevertheless there was, Mr Wyand argued, an agreement, even though the proprietors cannot now point to a precise date on which it was reached and no-one now can properly recall what its terms were.

50. Mr Vanhegan drew my attention to the conditions that must be met for there to have been a contract. He stressed that there needed to be *consensus ad idem* and that this required there to have been an offer, consideration and acceptance of terms that were certain. He drew my attention to precedents in support of this, such as *Scammell v Ouston [1941] AC 251*, in which, for example, Lord Wright said (quoting from an earlier judgement):

“To be a good contract there must be a concluded bargain and a concluded contract is one which settles everything that is necessary to be settled and leaves nothing to be settled by agreement between the parties.”

Mr Vanhegan claimed there had never been a concluded bargain between Mr Bowden and Mr Buckenham (acting on behalf of BNOS) in the present case. There had, he acknowledged, been discussions, but *consensus ad idem* had never been reached.

51. I accept the principles that Mr Vanhegan urged me to apply. Further, having considered all the evidence - and not least the confusion in Mr Buckenham's own story - I agree there was never a concluded agreement. There was certainly talk of an agreement, and I am also sure there was consensus on some elements of the intended agreement. In particular, the evidence shows it was clearly understood by both sides that BNOS would have the right to exploit the invention, and that there would be some sort of royalty payment. However, that is not enough to make a concluded agreement, and I do not think the point was reached where both sides were of one mind. For example, I do not believe Mr Bowden and Mr Buckenham

ever actually agreed what the royalty rate would be, when payments would start and how long they would last. Doubtless Mr Buckenham had certain ideas in his mind on these issues and may well have expressed them at the time, but there is no evidence Mr Bowden ever accepted them. I have reached this conclusion in part because no two witnesses were able to agree what was in the agreement, but in part because Mr Buckenham's own view as to what was in it seemed to shift from time to time. The absence of any written record of the alleged agreement is also, in my mind, a telling factor.

52. In short, if I had found differently on Mr Bowden's claim to inventorship, it follows that I would then have found Mr Bowden did retain some proprietary rights in the patent and had not assigned them unequivocally to BNOS. That does not, of course, mean he would have sole and unencumbered rights to it. Mr Bowden does not deny that the miniature cycling circuit was Mr Dearman's idea. That circuit is in my judgement crucial to the invention of claim 1. Without it, claim 1 is an empty ideal with no means of achieving it. Thus any rights Mr Bowden might have had would have to be shared with the rights emanating from Mr Dearman's contribution. Further, Mr Wyand argued that even if I found for Mr Bowden, because he had acted in a way that gave BNOS to understand he was authorising them to exploit the invention, that would need to be reflected in the relief granted. I think Mr Wyand may well have a point. However, since the situation is a hypothetical one, it would be inappropriate for me to go further and decide what relief I would actually have granted, so I will leave the matter there.

Conclusion

53. In his application under section 13, Mr Bowden asked me to find that Messrs Dearman, Buckenham, Sharpe and Cookman were not inventors. I find that Messrs Buckenham, Sharpe and Cookman were not inventors but that Mr Dearman was. In his reference under section 37, Mr Bowden, asked me to find that he was the true proprietor. I find that he is not the, or even a, true proprietor. In reaching a decision on Mr Bowden's claim to entitlement I have had to consider his own role in the invention, an issue on which a lot of the evidence and argument concentrated, and have come to the conclusion that he was not an inventor either.

This puts us in an unusual position, because effectively, so far as section 13 is concerned, I have reached a conclusion that neither side invited me to reach, because neither side challenged Mr Bowden's status as inventor.

54. I now need to make an order to give effect to my findings. I agreed at the hearing that I would not, in fact, do so without first giving the parties an opportunity to make submissions. Ideally I hope the parties will now agree between them what order would be appropriate under both sections 13 and 37, but if not I will hear their separate submissions. Consequently, I will allow the parties one month from today to make either a joint submission as to the order I should now make or, if they cannot agree, to make separate written submissions. I will then either make an appropriate order or, if the parties disagree and want to be heard, arrange a further hearing.

Costs

55. Both sides have asked for costs. Costs from the preliminary hearing were deferred to be dealt with at this stage, and I am aware that the referrer was successful at that hearing. At the substantive hearing, he has been successful insofar as I have partially agreed his application under section 13, but in truth that is a trivial victory. On the important issues he has lost, because I have found against him on Mr Dearman's inventorship and against him on entitlement. I therefore consider BNOS should be awarded costs based on the usual scales but with a small reduction in view of the referrer's success at the preliminary stage and minor success at the substantive stage. I will, however, defer settling the exact amount until I make my final decision, just in case further costs are warranted in respect of anything that happens between now and then.

Appeal

56. Any appeal from this decision must be made under Order 104 Rule 19 of the Rules of the Supreme Court and lodged within six weeks.

Dated this 18th day of December 1998

P HAYWARD

Superintending Examiner, acting for the Comptroller

THE PATENT OFFICE