

Abstract

Dispute on inventorship/ownership at RO/GB. Upon review at the Chancery Division, an ancillary issue was confirmed that the international filing date was the national filing date under PCT Article 11(3).

NORRIS'S PATENT

PATENT OFFICE CHANCERY DIVISION (PATENTS COURT)

[1988] RPC 159

HEARING-DATES: 25, 26 February, 9 March, 30 July 1987

30 July 1987

COUNSEL:

Richard Miller and AL Meddle (patent agent) for the opponent (appellant, respondent on cross-appeal); Martin House and PH Nancarrow for the referrer (respondent, appellant on cross-appeal)

PANEL: WJ LYON FALCONER J

JUDGMENTBY-1: FALCONER J

JUDGMENT-1:

FALCONER J: I have before me two appeals from the decision dated 3 July 1986 of the superintending examiner (Mr Lyon), acting for the Comptroller, in this matter which concerns a dispute as to the ownership of the invention of an automatic refractometer the subject of UK patent No 2087554 and of international patent application No WO 82/01771 and, therefore, as to the ownership of that UK patent and international application. The UK patent was granted upon application No 8134786 -- that application and the international proceeded in the name of Mr Harold Norris. On 14 February 1984 two questions were referred to the Comptroller by Mr Rolf Karl Gundermann under sections 8(1)(a) and 12(1)(a), namely:

(a) under section 8(1)(a), the question whether he had a right in UK application 8134786 and was entitled to be granted a patent in respect of it; and

(b) under section 12(1)(a), the question whether he had a right in international application WO 82/01771, and was entitled to the benefit of that application in the countries therein specified (which were Japan, the Federal Republic of Germany and the United States of America).

By the date of the hearing before the superintending examiner the patent had been granted upon the UK application and, therefore, as the superintending examiner pointed out in his decision, the reference under section 8 fell to be treated as having been made under section 37 -- under section 37 the question became whether the patent or any right under it should be transferred to Mr Gundermann. Under section 12, at the hearing before the superintending examiner the patent agent for Mr Gundermann sought a finding that Mr Gundermann was the sole inventor for use in the patent offices of the foreign countries in which the international application was proceeding as national applications.

The invention the subject of the patent and international application is succinctly described by the superintending examiner as follows:

"The invention is concerned with a device for automatically determining the refractive index or a related parameter, of a sample, in particular a fluid sample. There is a transparent (eg glass) reference body with a plane face which is in contact with the sample, and a parallel beam of light is directed within the reference body so as to strike the plane face. If the angle of incidence (relative to the normal to the plane) is less than a critical angle the beam passes into the sample but if it is greater the beam is totally internally reflected within the reference body. A large change in intensity of the reflected beam therefore occurs as the incident beam is scanned through the critical angle and by determining when this occurs a measure of the critical angle and hence the refractive index of the sample can be determined".

The UK patent has independent claims directed to the refractometer itself and to the method of using it -- claim 1 is set out in the decision at page 5 and I need not re-state it. As the superintending examiner stated, rightly in my view, he was not concerned with the precise formulation of the claims but needed to consider all aspects of the invention. He pointed out that the invention involves two distinct interrelated aspects which he explained as follows:

"It can be seen that as claimed the invention involves two distinct but interrelated aspects. The first aspect is optical. A reference body of semicircular cross-section (eg hemispherical) facilitates the production of a parallel beam within the body so that all the light striking the plane face at the same time is at the same angle of incidence. The scanning of the incident beam through the

critical angle facilitates the detection of the critical angle by electronic means since the detected beam provides a temporal rather than a spatial variation in intensity. This is in contrast to refractometers where light is shone at the plane surface at a range of angles simultaneously, some above and some below the critical angle, so that the critical angle is indicated by the position of the transition between light and shade on the output side.

The second aspect, the control aspect of the invention, involves sensing the maximum rate of change of the detector output to indicate the attainment of the critical angle."

In his decision the superintending examiner considered the devising of each of those two aspects separately. As to the optical aspect he found the evidence inconclusive and that, therefore, Mr Gundermann had failed to make out his case. As to the control aspect, he analysed that into two matters (a) the concept and (b) the electronic arrangements for giving practical effect to that concept. On the devising of the concept he held that the evidence was inconclusive and that accordingly Mr Gundermann had failed to make out his case in respect of that concept. On (b) the electronic arrangements for realising the concept he held that on the balance of probabilities Mr Gundermann had "contributed to the design of the electronics system which forms a significant aspect of the invention in the patent and therefore has some right in this invention". He considered the proper course, in view of that finding, was to join Mr Gundermann's name to that of Mr Norris as joint proprietors of the patent and ordered the register to be amended to that effect. He declined to make any order under the reference under section 12 giving effect to his finding that Mr Gundermann had contributed to the invention.

The decision is appealed by both parties. Mr Norris, whose notice of appeal was dated 13 August 1986, accepts the finding on the optical aspect but appeals against the finding that Mr Gundermann contributed to the electronics system for the control aspect and against the order for amending the register to join Mr Gundermann as a joint proprietor. Further, if he is wrong as to that, Mr Norris in the alternative asks that the order of the superintending examiner be varied so as (i) to provide that in place of amendment it is ordered that the said patent be transferred to the opponent and the referrer and (ii) to add an order that the referrer do pay to the opponent half the opponent's expenses properly incurred in obtaining the said patent.

Mr Gundermann appealed against the superintending examiner's failure to find he was the sole deviser of the invention and he seeks:

"(1) A declaration that Rolf Karl Gundermann is the true proprietor of the patent in suit and an order that he be so registered as sole proprietor in place of Harold Norris.

"(2) A declaration that Rolf Karl Gundermann is entitled to the benefit of the patents granted on the foreign applications made under international application WO 82/01771 in place of Harold Norris."

He also claims in the alternative that the superintending examiner ought to have considered whether, on the finding that he made, the referrer's contribution should be divided out of the specification so that the referrer would be entitled to make a new application pursuant to section 37(4)(b) of the Patents Act 1977.

On the hearing before me I directed, with the agreement of counsel on both sides, that the hearing should be confined to the substantial issues, leaving consideration as to what order should be made thereafter after my decision on the substantial issues as to inventorship.

I desire to say at this stage that this is pre-eminently a case in which there should have been discovery and production of documents and cross-examination of the main declarants on each side. On the written evidence, much of which is not in a satisfactory form, there is an acute conflict of testimony -- when that became apparent, the patent agents acting on both sides should have requested cross-examination of the main declarants under the provisions of rule 103(2) and (3). Again copy documents are exhibited and their state is unsatisfactory -- thus Exhibits HN.2 and 3 to Mr Norris's declaration are stated as being copies of drawings having dates thereon but no dates can be seen on the exhibited copies. Further, the authenticity of the date on Exhibit HN.7 which is stated to be a copy of a copy is in issue. Discovery of the originals of those documents might have been of much assistance and should have been sought before the hearing at the Patent Office.

The relationship between the parties, Messrs Norris and Gundermann, is summarised in the decision in a passage which I gratefully adopt without quoting it in extenso.

Considering first the devising of the optical aspect of the automatic refractometer, the subject of the patent, it is reasonably clear, from the minutes of the meeting at the Rutland Arms Hotel, Newmarket on 29 October 1972 at which Messrs Norris and Gundermann were present with Drs Wright and Matheson of the University of East Anglia, that by that date the optical system for the refractometer had been designed -- it was only to be "optimised" by Drs

Wright and Matheson. But that fact does not really assist in deciding who was the deviser of the optical system, Mr Norris or Mr Gundermann.

Mr Gundermann is an electronics engineer who was employed as such by Bellingham & Stanley Limited, optical instrument manufacturers, from October 1967 to August 1975. He was, according to Mr Stanley the managing director of that company, "extremely competent and was suited to development work, having the ability to design electronic circuits". Mr Gundermann stated in his first declaration that his work "included the development, with Harold Norris, of an optical ellipsometer designed originally at the suggestion of Drs Matheson and Wright . . . in collaboration with the University". Mr Stanley makes it clear in his declaration that Mr Gundermann's share in the development of that ellipsometer was the design of the electronics for that instrument. However, no doubt from the nature of his work at Bellingham & Stanley Ltd in designing electronics for optical instruments, he must have acquired a degree of competence in optics and he had attended a summer school in optics at Imperial College in 1969. His evidence is that he "became interested in the problem of designing automatically-reading optical instruments, particularly refractometers". He states on page 2, in paragraph 7, at line 7

"I knew from my work on various types of optical instruments that the main problem would reside in the difficulty of obtaining a sufficiently clear-cut boundary between the bright and dark parts of the field, and I spent some of my spare time in considering how to increase the contrast of the boundary."

In paragraph 8 he states:

"That as a result of my consideration of the problem, I invented a novel optical system for a refractometer in which the test prism, instead of being a body of constant polygonal cross-section, would have a flat test surface to contact the sample, but would otherwise be bounded by a circular cross-section, and the optical arrangements would include a divergent incident beam which would be focused by the effect of the circular section into a parallel beam within the prism. In particular, one effect of the circular section of the prism would be that the parallel beam would be directed at the same region of the sample interface, irrespective of the tracking of the incident beam around the prism. The effect of the circular section on the emergent beam would be to focus it at points on a circular locus where it might be conveniently detected by suitably disposed detector means. I also felt that a hemispherical prism we an aspherical surface. All these early experiments were carried out with the planar surface of the lens vertical for convenience and I used a plasticine cup to hold the water whose refractive index was to be determined against the plano surface of the lens. The experiments I did at this time were sufficient to show me that the idea could be

made to work, but I lacked both the facilities and the money at that time to carry the idea any further".

It seems to me that that is a much more credible account as to the genesis of the optical system of the patented refractometer than that emanating from Mr Gundermann.

In the reply evidence there is a declaration by Mr Rhodes who puts himself forward as "a consultant in the design of optical systems for scientific equipment" but with a dearth of particulars as to his qualifications and experience. His evidence is to the effect that Mr Norris's 1969 experiments would have produced discouraging results because Mr Norris did not have a lens of exactly semi-circular cross-section or use a monochromatic light source, but, as the superintending examiner rightly observed in his decision, "Discouraging results would however be consistent with Mr Norris's account of events, which was that he appreciated the limitations of the equipment he used in 1969, but lacked the facilities and money to take his ideas further". Mr Norris explained in his declaration (paragraph 5) that at about that time Mr Gundermann, in his employment at Bellingham & Stanley Ltd, was working on automatic refractometers, one involving a flat-faced and the other a "prism, both refractometers prosm using optical systems quite different to that of the refractometer the subject of the patent in suit, and stated that he told Mr Gundermann "very briefly" of the new concept he (Norris) had arrived at based on the Zeiss "Gem" refractometer. That is denied by Mr Gundermann (second declaration, paragraphs 3 and 6) -- he stated in his first declaration (paragraph 9) that he had outlined his ideas to Mr Norris but does not state when except that it must have been prior to the date of the Newmarket meeting on 29 October 1972. Mr Gundermann produced, as Exhibit C to his first declaration, a copy drawing which he stated he made to illustrate the theoretical basis of his invention at some date before 1973 -- but it merely shows what is apparently a representation of a semi-circular cross-section prism and otherwise indicates nothing of the optical concept of the patented refractometer. On the other hand, the copy drawings exhibited as HN.2 and HN.3 to Mr Norris's declaration, of which he stated the originals are dated October 1971 and November 1971 respectively show a considerably developed stage of thinking towards the optical concept of the patented refractometer -- with the upper drawing in HN.2 depicting what appears to be in plan view a scanning arm similar to that appearing (in side elevation) in Fig 3 of the drawings of the patent. HNF.4, another copy drawing exhibited by Mr Norris which he stated he believes was made at about the same time (ie October-November 1971) does indeed show the germinal idea of the optical aspect of the patented refractometer.

On the materials before me, I have come to the conclusion that on the balance of probabilities the optical aspect of the patented refractometer was the invention of Mr Norris following his seeing the old brochure of the Zeiss "Gem" refractometer and appreciating thereafter that it might be automated by arranging a simple scanning action so as to detect automatically the critical angle and that sometime thereafter and before October 1972 he had told Mr Gundermann of his concept.

It follows that Mr Gundermann's appeal must fail.

Before coming to the electronics aspect which is the subject of Mr Norris's appeal I should mention briefly one matter. It was suggested by counsel for Mr Gundermann that I should treat Mr Norris's evidence as unreliable, in particular because of Mr Norris's statement in paragraph 8 of his declaration that he had "personally carried out the bulk of the mechanical design and all of the optical design" of the ellipsometer to which I have referred earlier which counsel said was shown to be untrue in view of the evidence of Mr Stanley in his declaration seeming to indicate that another employee of Bellingham & Stanley Ltd had been responsible for some of the optical calculations for the ellipsometer. Mr Stanley's evidence in that regard has to be viewed in the light of his attitude to Mr Norris as revealed in Exhibit H to his declaration. Furthermore, Mr Gundermann himself stated that his work "included the development, with Harold Norris" of the ellipsometer and, as Mr Stanley only credits Mr Gundermann with the design of the electronics of the ellipsometer, that seems to leave Mr Norris with responsibility for the optical and mechanical aspects, though it may have been an overstatement by Mr Norris to refer to "all of the optical design" of the ellipsometer as his work. It is to be remembered that work took place some 15-16 years before the date of his declaration.

I come now to the control aspect of the patented refractometer, which, as the superintending examiner stated, involves sensing the maximum rate of change of the detector output to indicate the attainment of the critical angle.

The superintending examiner considered the control aspect of the invention to consist of (a) the concept used to detect the transition in the output beam (ie reflected from the planar surface of the prism) from light to dark and (b) the means for giving effect to the concept.

The concept he explained as "based on the fact that as the incoming light traverses the critical angle, there is a smooth rather than a sudden change in the intensity of the output beam and that consistent results are obtained if the critical angle is taken to be the angle at which the maximum rate of change of intensity occurs".

Mr Norris clearly used that concept in the experiment with his modified original prototype and using a hemispherical prism which he described in paragraph 11 of his declaration and stated as taking place, so he believed, early in 1974 -- but he used it by plotting the readings of an analogue light meter receiving the reflected beam and determined the critical angle from the slope of the graph, namely from the greater slope denoting the maximum rate of change. Mr Gundermann seems not to have known of that experiment or considers that it is a reference to an experiment after his note dated 27 February 1975 (his Exhibit D) which he sent to Dr Wright at some stage in 1975. There is a dispute between the parties as to whether Mr Norris's typed note, Exhibit HN.7 and its accompanying diagram HN.8 bear the correct date of 15 February 1975, antedating Exhibit D. However that may be, Mr Gundermann agrees he was present when HN.7 was typed. Now from HN.7 it is reasonably clear that some experiments had by then been performed to determine the measured outputs stated in the third paragraph of HN.7. But it is equally clear by that time that no mechanism for traversing the scan automatically had been devised -- it was to use "a cam, eccentric or steam engine type drive (yet to be decided)". That would fit in with that note HN.7, whatever was the correct date of its typing, as following an experiment with an analogue arrangement such as described by Mr Norris as his 1974 modified prototype. If the concept of ascertaining the critical angle from the point in the scan of maximum rate of change of intensity of the output beam with angle was novel -- and neither side actually suggests it was -- Mr Norris's 1974 experiment and modified prototype seem to be the first manifestation of it in the available material.

However, as to the means for giving effect to that concept, it is plain from HN.7 (the lower portion under the sub-heading "Electronics") that by the time that note was typed (and Mr Gundermann was present at its typing), the parties had arrived at the basis of an electronic means, by digital differentiator, of computing and recording the maximum rate of change of the intensity of the output beam with angular displacement. On the balance of probabilities, it seems to me that the conclusion must be that that realisation emanated from Mr Gundermann, an accepted expert in electronics, who, it does not seem to be in dispute, was to design the electronics for the proposed automatic refractometer. So viewed the short disclosure of the electronics in HN.7 is reconciled with what is really the same system described more fully in Exhibit D.

In his decision the superintending examiner describes shortly the system disclosed in the patent for giving practical effect to the concept and that disclosed in Mr Gundermann's Exhibit D and I adopt his descriptions. He concludes: "It can be seen therefore that in both systems the scanning arm is driven by a cam and its position is determined by counting pulses from an initial

position sensed by a detector. In addition in both systems the maximum rate of change is determined using digital techniques and the corresponding position count stored", and further that he considers the two arrangements are functionally very similar. I agree.

Although I accept the evidence of Mr Nelson in his declaration that he designed the electronic system of the specific embodiment of the automatic refractometer described and illustrated in the patent specification, it seems to me on the balance of probabilities that his instructions from Mr Norris would have included at least such information as is to be found under "Electronics" in HN.7. That being so I think the superintending examiner came to a right decision in finding that Mr Gundermann contributed to the design of the electronic system which forms a significant aspect of the invention disclosed in the patent, although I have arrived at the same conclusion by a somewhat different reasoning. Accordingly, I agree with his finding that Mr Gundermann has some right in the invention. On the substantive issue, therefore, Mr Norris's appeal fails also.

I will hear counsel as to the form of the order to be made in the light of my findings.

DISPOSITION:

The matter was adjourned on 9 March 1987 after judgment. Subsequently, on 30 July 1987, with the agreement of the parties, Falconer J discharged the Comptroller's order adding G as joint proprietor and remitted the reference to the Patent Office for the taking of further evidence and hearing of further argument as to the appropriate order to be made having regard to the decision of the Comptroller and in the light of the judgment.

SOLICITORS:

Forrester, Ketley & Co; PH Nancarrow