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PATENTS ACT 1977

IN THE MATTER OF a reference under Section 37 by Alphons D Beshay in respect of Patents Nos 2192397, 2193503 and 2203743 in the name of Bohuslav Vaclav Kokta

DECISION

The reference by Dr Beshay, concerning the entitlement to ownership of Patents Nos 2192397, 2193503 and 2203743 was made originally under Section 8, before the grant of the corresponding applications. After grant, by virtue of the provision of Section 9 of the Act, the reference is now to be treated as if it had been made under Section 37.

This decision follows a hearing before me on 3 June 1991 at which the referrer, Dr Beshay, appeared in person and the patentee, Professor Kokta, was represented by his patent agent, Mr D C Harrison of Mewburn Ellis & Co.

At the hearing, in the absence of any objection by Dr Beshay, I allowed the admission of late-filed evidence submitted on behalf of the patentee, this being a second affidavit and two exhibits sworn by Professor Kokta and a statutory declaration by Mr Harrison.

The three patents which are the subject of this reference are each directed towards a composite material comprising discontinuous wood fibres dispersed in a thermoplastic polymer matrix, with the two major components being held together by a bonding agent. In each case it is either necessary or, at least, desirable to pretreat the wood fibres with the bonding agent and some of the polymer before incorporating them into the main body of polymer and the pretreatment product is claimed independently of the final composition. It is stated that the adhesion of wood

cellulosic fibres to the polymer matrix is substantially improved and that the reinforced thermoplastic composites, which are derived from readily available cheap components, have good strength and moulding characteristics.

In Patent No 2203743, which I will abbreviate to "743", the polymer is polyethylene and the bonding agent is a mixture of (i) a silane, (ii) a free radical source, for example benzoyl peroxide, and (iii) an ethylenically unsaturated carboxylic acid or anhydride, for example maleic anhydride. The silane must be one of three compounds which are identified in the claims by their trade marks, A172, A174 and A1100 and which are identified chemically in the body of the specification, and the quantities of each element of the bonding agent must be within specified ranges; in this patent the pretreatment step is an essential limitation of the claims.

Patent No 2192397 ("397") also claims a silane-bonded composite of wood fibre and thermoplastic, but here the thermoplastic is polyvinyl chloride, the number of silanes which may be used is increased from three to seven, whilst still including A172, A174 and A1100, the unsaturated carboxylic acid or anhydride is only a preferred ingredient of the bonding agent and the pretreatment step is no longer essential to claim 1.

Patent No 2193503 ("503") is less closely related to the other two patents. It is still concerned with a wood fibre-thermoplastic composite, but in this case the bonding agent is one of a number of specified isocyanate compounds and the polymer is polystyrene.

Dr Beshay claims to have made the inventions claimed in 743 and 397 in part while he was working at the Université du Québec à Trois-Rivières ("the University") in Canada. The invention claimed in 503 is, he says, an obvious variation of the other inventions, involving no additional inventive contribution.

On the contrary Professor Kokta, in whose Department at the University Dr Beshay worked between September 1983 and June 1985, says that any work relating to the inventions in suit done by Dr Beshay at the University was done under his close instruction and supervision, that the inventive contribution was his and that the patent rights belong to him under the rules of the University.

The first matter which I have to decide is whether or not the referrer's case is one which properly I can determine under Section 37. At the hearing Mr Harrison pointed out that, in his statement filed in accordance with Rule 7, Dr Beshay did not follow the more usual course of asking for rights in the three patent applications to be transferred to him; instead he sought 'rejection' of the applications. Mr Harrison saw this request as incompatible with the terms of subsections 37(1) and 37(4).

As amended by the Copyright, Designs and Patents Act 1988 these subsections now read as follows:

> "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 -
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> (a) who is or are the true proprietor or proprietors of the patent,
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> (b) whether the patent should have been granted to the person or persons to whom it was granted, or
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> (c) whether any right in or under the patent should be transferred or granted to any other person or persons;
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> and the comptroller shall determine the question and make such order as he thinks fit to give effect to the determination.
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> . . . . . .

(4) Where the comptroller finds on a reference under this section that the patent was granted to a person not entitled to be granted that patent (whether alone or with other persons) and on an application made under section 72 below makes an order on that ground for the conditional or unconditional revocation of the patent, the comptroller may order that the person by whom the application was made or his successor in title may, subject to section 76 below, make a new application for a patent -

(a) in the case of unconditional revocation, for the whole of the matter comprised in the specification of that patent; and

(b) in the case of conditional revocation, for the matter which in the opinion of the comptroller should be excluded from that specification by amendment under section 75 below;

and where such a new application is made, it shall be treated as having been filed on the date of filing the application for the patent to which the reference relates."

Mr Harrison took the view that, according to subsection 37(4) revocation of a granted patent can only be made on an application under Section 72 and, since no such application has yet been made, I have no jurisdiction to determine the matter. In his submission, Dr Beshay, in asking for refusal of the three patent applications or, since patents have now been granted, revocation of those patents, is not referring a question of proprietorship as required by Section 37.

While I have to agree with Mr Harrison that it is not entirely clear from Dr Beshay's statement and evidence and from comments which he made at the hearing whether Dr Beshay is seeking revocation of the patents in suit or a transfer of the rights in the patents, I think that the difficulty to

which Mr Harrison referred is more theoretical than real. Mr Harrison did not suggest that this uncertainty had prejudiced the presentation of his arguments, nor did he express any doubt that the proceedings were concerned with anything other than the ownership of the three patents; rather, I think, he was making his view clear that these proceedings should be confined to the dispute about ownership which I accept. In any case it seems to me that, if I were to find in favour of the referrer, the subsquent procedure is covered in the Act in that it would be open to Dr Beshay to make an application for revocation under Section 72 seeking the relief for which provision is made under Section 37(4). Accordingly I am satisfied that the question before me is the proprietorship of the patents in suit which was initiated under Section 8 and which properly I can determine under Section 37(1).

Turning then to the question of the ownership of 743, Dr Beshay's claim is based primarily on his assertion that he made the invention during the period of his employment at the University. Mr Harrison pointed out at the hearing that inventorship and ownership are not necessarily one and the same thing and I have some doubts as to whether Dr Beshay fully appreciated the distinction. Nevertheless in the circumstances of this case, if Dr Beshay fails to demonstrate that he was the sole or a joint inventor, the question of ownership does not arise.

Much of the evidence concerning Dr Beshay's employment at the University and his previous experience is not in dispute and may be summarised as follows.

Dr Beshay graduated from the University of Cairo in 1964. He holds a masters degree of another Egyptian university and was granted a PhD at the University of Graz in Austria in 1981, the subject of his thesis being lignocellulose-polymer composites. Between 1981 and 1983 he returned to Egypt to work on interfacial bonding between cellulose fibres and

polymeric resin. This background suggests to me that, when Dr Beshay entered the University, not only was he a researcher of some considerable experience, but that his recent work was particularly relevant to the subject of thermoplastic/wood fibre composites. The relevance of his experience was underlined when, two weeks after entering the University, he addressed a symposium under the auspices of Professor Kokta on the subject of "Polymer Composites of Thermoplastics and Natural Rubber".

Dr Beshay was initially employed at the University on a one-year contract. He began work for Professor Kokta on a series of experiments designed to make and evaluate composites of polyethylene and various fillers, including wood fibres and minerals, using polystyrene as a grafting or bonding agent. Dr Beshay agrees that he performed these experiments, but claims that they were unsuccessful in producing commercially useful products. Further experiments using a bonding agent called "Epolene" (maleated propylene) were also performed at Professor Kokta's direction but, according to Dr Beshay, these too were inconclusive. Dr Beshay says that he then began work using silane bonding agents, and it was essentially during this work that he made the inventions in suit. He claims to have done this work largely on his own, although he concedes that Professor Kokta was involved administratively in arranging funds, drawing up work schedules and making arrangements for publication. That Dr Beshay worked on silanes is not disputed by Professor Kokta, but he does dispute the scope and significance of this work and the degree of supervision which Dr Beshay received.

Dr Beshay's one year contract was renewed for a second year and a third year's renewal was offered to him in a letter from Professor Kokta dated 4 February 1985, but was evidently not pursued. In May 1985 Professor Kokta also offered Dr Beshay a contract under which he would receive 40 or 50% of any patent royalties resulting from commercial exploitation of an invention concerning "Use of wood fibres,

wood flour, wood shavings and biomass in olefinic composites". Dr Beshay rejected this offer and in the same month filed US Patent application 4717742 ("US742") which I shall discuss in detail below. Six days later Dr Beshay was dismissed from the University for failing to provide Professor Kokta with reports of his research work and for failing to give an undertaking of confidentiality in respect of his work.

Dr Beshay's patent US742 is for a composite material comprising specified wood fibres and a thermoplastic polymer selected from linear low density polyethylene or isotactic polypropylene. The method of preparation involves a pretreatment step as do the patents in suit and the bonding agent is a mixture of silane (A174 or A1100), benzoyl peroxide and maleic anhydride. The claims of US742 are narrower in several respects than UK743 but, in so far as they relate to polyethylene, they appear to fall entirely within the UK claims. The body of the US specification includes a great deal of experimental detail including twenty-one examples.

Dr Beshay sees this US patent, which is in his name, as proof that he invented not only the detailed subject-matter claimed, but also the wider use of bonding agents in thermoplastic/wood fibre composites. Professor Kokta, however, says that work in the narrow field particularly described in US742 cannot be extrapolated to other polymers and other bonding agents and that general references to polystyrene and polyvinyl chloride in the introductory description of the US patent are speculative. He also contests the inventorship of the work protected by the patent. In his submission, this work was done by Dr Beshay under close supervision, in which the professor provided the inventive ideas and Dr Beshay merely performed routine experimental work as a "workman" or "artisan".

I find it difficult to accept that a worker of Dr Beshay's

experience would be employed in this way. As I have already indicated above, when Dr Beshay entered the University he had nineteen years of post-graduate experience, including a PhD in ligno-cellulose/polymer composites, and two years post-doctoral experience directly relevant to the topic in hand. It would surely be surprising if a researcher of this experience did not take some responsibility for his own work and provide some ideas of his own. There is no suggestion that Dr Beshay was not up to the position which he held. I note, for example, that in a letter dated 18 April 1984 (Exhibit B4) the professor describes Dr Beshay as "intelligent" and "capable of working individually" and as having "quite unique experience" in the field of wood composites and "undisputable" qualifications.

In May 1985 Professor Kokta offered Dr Beshay a contract under which he would have received 40 to 50% of the royalties resulting from any commercial exploitation of wood-fibre olefin composites. As Mr Harrison pointed out, this offer was rejected and contractual entitlement does not feature in Dr Beshay's case. But I think it unlikely that such an offer would have been made if Dr Beshay did no more than routine work under close supervision.

There is also some independent evidence (Exhibits B19a, b, c) in the form of written statements and transcripts of telephone conversations in which other workers in Professor Kokta's department are quoted as supporting Dr Beshay's submission that he had a measure of independence in the handling of his own work. I do not know the circumstances in which these statements were made - they were not made under oath - and I do not therefore place any great weight upon them but, such as they are, they support Dr Beshay's view rather than Professor Kokta's.

When all this evidence is taken into account it suggests to me that Dr Beshay did make an inventive contribution to the work protected by his own US Patent 742 and, since this work

was carried out under Professor Kokta's supervision and constitutes a major part of the work protected by the professor's UK Patent 743, I find that Dr Beshay also made an inventive contribution to the UK patent. I do not, however, accept Dr Beshay's claim to be the sole inventor. The evidence does not prove this and, if Dr Beshay worked to Professor Kokta's supervision, it seems equally unlikely that either of them provided all of the inventive ideas. Accordingly, I see the inventorship (but not necessarily, of course, the proprietorship) of UK743 as shared by the two parties.

Patent UK397 is similar to 743, but relates to polyvinyl chloride rather than polyethylene. As I have already indicated, there are other differences, but most of the evidence and discussion has been concerned with the different polymer used. Dr Beshay's claim to inventorship of this patent seems to be based on his contention that the invention disclosed in US742 is wider in application than the claims of the specification suggest and that the particular examples described in the US patent show merely a selection of the polymers which may be used. Professor Kokta submits that Dr Beshay did not work on polyvinyl chloride/silane systems while at the University. I do not think that Dr Beshay disputes this and, although in Exhibit B13, Professor Kokta credits Dr Beshay with work on polyvinyl chloride, the nature of this work has not been disclosed by either party.

As evidence of the wider applicability of his invention, Dr Beshay refers to his US continuation-in-part Patent No 4820749, which has wider claims and description. However, this application was not filed until September 1987 and gives no indication, therefore, of the state of Dr Beshay's knowledge at the time when he was under Professor Kokta's supervision. Conversely, as Mr Harrison pointed out, the filing of this application two years after Dr Beshay left the University suggests that it would not have been justified in 1985 to extrapolate beyond the limited claims of US742.

Brief mention of polyvinyl chloride is made in the introduction to US742 (column 2, line 26), but I incline to Professor Kokta's view that if this were more than speculation, the patent claims would have been cast broadly enough to embrace polyvinyl chloride.

Prior art cited by Professor Kokta suggests that the three patents in suit are in a well-worked field. For example, a paper by M Xanthos (Exhibit BVK8 of the patentee's evidence in chief) which was published in 1983 discusses the use of silane A174 and a maleic acid imide as coupling agents for polypropylene composites with mica and wood flour. This paper shows that adhesion is improved if a free radical source, such as dicumyl peroxide, is present, a common feature in two of the three patents in suit. Another paper by Chun and Woodhams (Exhibit BVK9) deals with polypropylene/mica composites and seeks to find a replacement for silane coupling agents, which are said to be well known. This background art suggests that none of the three patents in suit protects a major theoretical breakthrough. Their strength is rather in the optimisation of conditions to achieve a commercially useful product. Such inventions may, of course, be of great value, but in research of this nature it will be more difficult to extrapolate from one situation to another. Having regard to all these circumstances, I do not accept Dr Beshay's claim to be the devisor of the invention claimed in UK397.

It is unnecessary for me to say a great deal about UK503. This patent relates to polystyrene/wood fibre composites in which the bonding agent is one of a limited number of specific isocyanate compounds. It therefore involves both a different polymer and a different coupling agent from either of the other two patents in suit and to this extent is also further removed from Dr Beshay's US Patent 742. The difficulty of using research on one coupling agent to predict results with another is demonstrated by the work which Dr Beshay undertook for Professor Kokta when he first arrived

at the University. These experiments using first polystyrene and then "Epolene" as a coupling agent for polyethylene/wood fibre composites were said by Dr Beshay himself to be unsuccessful, but this lack of success did not discourage further successful research on silane coupling agents. Against this background, it would not be justified, in my view, to assume that the use of silane coupling agents protected by US742 and UK743 in any way envisages the use of isocyanate coupling agents claimed in UK503 and, accordingly, I do not accept Dr Beshay's claim to have devised the invention protected by this patent.

Even if Dr Beshay devised in whole or in part the invention claimed in UK743, using his own ideas and ability, it does not necessarily follow that the patent or any part of it is his property.

The question of the right to apply for and to obtain a patent is dealt with in Section 7 of the Act which reads as follows:

> "7. (1) Any person may make an application for a patent either alone or jointly with another.
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> (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."

Dr Beshay did not address me on the law regarding proprietorship but Mr Harrison referred me to a number of authorities including Viziball Ltd's Application [1988] RPC 213. I do not think that I need to go through these authorities because I accept Mr Harrison's submission that, having regard to the provision of sub-section 4 of section 7 in particular, the onus of establishing a proprietary right in the patent rests upon Dr Beshay.

Dr Beshay was paid a salary to do research at the University and he may therefore be regarded as an employee of that institution. The rights of employee inventors in this country are set out in Section 39 of the Act which, for present purposes, may be summarised as saying that where an employee makes an invention in the normal course of his duties, that invention belongs to the employer. By this standard any invention made by Dr Beshay as a result of his research would belong to the University and not to himself or to Professor Kokta in the absence of any agreement to the contrary. However Section 43(2) of the Act says:

"(2) Sections 39 to 42 above shall not apply to an invention made by an employee unless at the time he made the invention one of the following conditions was

satisfied in his case, that is to say -

(a) he was mainly employed in the United Kingdom: or
(b) he was not mainly employed anywhere or his place of employment could not be determined, but his employer had a place of business in the United Kingdom to which the employee was attached, whether or not he was also attached elsewhere."

and since neither of these requirements are satisfied in this case, Section 39 does not apply.

The evidence of the two parties in this respect is really quite brief. Dr Beshay relies on his ownership of US742 as proof of his entitlement to the matter protected by that patent which is also protected by UK743, but there has been no suggestion that the ownership of the US patent has been tested in the courts in the United States.

The only other evidence relates to the so-called "Convention Collective" which both parties recognise as regulating intellectual property rights within the University. The relevant part of this document is given in French in Exhibit B3 and translated into English as

"The professor is the holder of the copyright of any work that he produces or of any patent, unless there has been a different agreement between the Professor and the University."

In paragraph 22 of his evidence Professor Kokta interprets this as meaning that any invention made under his supervision, which might otherwise have been considered to be the property of the University, belongs to him. Dr Beshay, however, in paragraph 14 of his first affidavit asserts that the agreement "merely acknowledges that the University will not apply in its own name for the copyrights and the patent rights for work done by its professors" and "it does not in

any way purport to settle rights between individual professors."

Since Dr Beshay is not a professor, I am not sure what he means by this statement. Clearly, where two or more professors are both concerned with a single patent, some further agreement within the terms of the article would be necessary, but this is not the case here.

At the hearing Dr Beshay argued that the Convention Collective only regulates matters as between the University and its professors and does not cover his own position but I have no evidence to this effect. Moreover, I have difficulty in accepting that the rules of the University would deal explicitly with the intellectual property rights of one group of its employees whilst remaining silent about those of another group. Although the wording of the agreement is not entirely satisfactory, it seems more likely to me that, as Professor Kokta has implied, all research work undertaken at the University is considered to be done under the auspices of one or other of its profesors and the Convention Collective awards any patent rights to the professor concerned.

Regardless of the degree of supervision and advice which he received from Professor Kokta, Dr Beshay admits that, at the very least, he worked nominally under the professor's direction and further corroboration of this is provided by the letter of dismissal to Dr Beshay of 6 June 1985 from the Director of the University. Dr Beshay was paid a salary by the University, which also provided him with the materials and accommodation to enable him to carry out his work. In these circumstances it is not surprising that Dr Beshay is regarded as having no entitlement to the patents rights by the University or by Professor Kokta and this would be consistent with the position in this country under Section 39 of the Act. Indeed, for Dr Beshay to establish rights in UK743, I think he would need to provide evidence of some

appropriate provision under Canadian law or of some agreement between himself and the University. In the absence of such evidence I accept Professor Kokta's submission that the Convention Collective transfers ownership of the patent rights to the relevant professor, namely Professor Kokta himself.

Accordingly I conclude that Dr Beshay has not discharged the onus upon him; I find that he has no proprietorial rights in any of the three patents in suit, and I dismiss this reference. I further direct that Dr Beshay shall pay to Professor Kokta the sum of £800 (eight hundred pounds) as a contribution towards his costs.

Dated this 22 day of July 1991

PATENT OFFICE

P J HERBERT
Superintending Examiner, acting for the Comptroller

THE PATENT OFFICE