

BLO/070/87

PATENTS ACT 1977

IN THE MATTER OF a reference to  
the Comptroller under Section 8(1)  
by British Gypsum Limited concerning  
the entitlement to Patent Application  
No 8201438 (published and granted under  
the number 2110146) in the name of  
Barry Clive Hook  
and

IN THE MATTER OF an application under  
Section 72(1) by British Gypsum Limited  
for revocation of Patent No 2110146.

DECISION

Reference has been made under Section 8(1)(a) of the Patents Act 1977 by British Gypsum Limited to the Comptroller of the question of whether they are entitled to be granted, either solely or jointly, a patent for an invention disclosed in application No 8201438 in the name of Barry Clive Hook. The reference was made on 10 February 1984 and, subsequently, a patent was granted on 1 August 1984 under the number 2110146. Therefore, by virtue of Section 9, the reference is treated as having been made under Section 37(1).

In addition to initiating proceedings under Section 8(1), British Gypsum have applied under Section 72(1) for revocation of Patent No 2110146 on the grounds that it is not a patentable invention within the meaning of Section 1(1)(a) or, in the alternative, Section 1(1)(b) and, that subject to the outcome of the Section 37(1) proceedings, the patent was granted to a person who was not the only person entitled under Section 7(2) to be granted that patent.

The two proceedings were heard together, by agreement of both parties, at a joint hearing convened before me on 11 February 1987

and at which Mr H Carr appeared as counsel for the patentee and Mr P Prescott appeared as counsel for the applicants.

Patent No 2110246 is concerned with a device for cutting adhesive tape which binds together and protects the longitudinal edges of pairs of calendered plasterboard panels which have been superposed in face-to-face relationship for transportation and storage. The superposed pairs of panels are conveyed past a roller which applies the tape continuously to the edges. When a microswitch senses a gap between two adjacent pairs of panels, a solenoid coil is energized and extends the solenoid plunger causing a cutting blade mounted thereon to move laterally to sever the tape bridging the gap between two adjacent pairs of panels. A return spring retracts the plunger to a non-fouling position upon de-energization of the coil. This arrangement gives a "fail-safe" provision in that the blade is left retracted if the electricity supply fails.

Claim 1 reads as follows:

A tape cutting device comprising a tape cutting blade mounted on the plunger of a solenoid, the coil of the solenoid being controlled by switch means having a sensor arranged to sense the occurrence of gaps between pairs of boards, said plunger being disposed so that on extension the blade will pass through a feed path of the tape, the solenoid coil being energisable to extend the plunger when a gap is aligned with the blade.

The appendant claims are all concerned with the "fail-safe" arrangement for retracting the blade and preventing operation of the blade in the event of failure of the electricity supply. Claim 6 is an omnibus claim for a tape cutting device as shown in the drawing.

The patentee, Mr Hook, was employed by British Gypsum between March 1978 and September 1979 as a trimming tape machine operator,

i.e., a "tape man", at their plasterboard plant at Kirkby Thore. The machine that he tended was of the type set out on page 1 of the patent in suit. The tape was cut in the gap between adjacent advancing pairs of superposed boards by a spring-urged knife having a rotary action, the spring being wound up as the boards advanced and being released by some form of mechanical feeler contacted by the edge of the boards at the gap between adjacent pairs. Mr Hook's duties comprised ensuring that the tape was correctly positioned on the edges of the boards and replacing empty tape reels. There is agreement between the parties that he was not employed to invent or to make modifications to existing machinery.

Mr Hook states in his statutory declaration that the cutters were unreliable and broke down frequently and they were liable to operate at the wrong time thus causing damage to the boards instead of cutting the tape. Mr Hook was not actively seeking a solution to these problems but one day whilst observing the operation of his door bell at home and noticing how the plunger of the solenoid was urged forward when current flowed in the circuit it occurred to him that this might provide a simple and reliable method of working the blade of a tape cutter. Putting the idea into practice he constructed a device in his garage by attaching the blade of a Stanley knife with sticky tape to the plunger of his door bell solenoid and found that when power was switched on, the blade moved forward and was capable of cutting paper.

Mr Hook apparently received no encouragement from his superiors in the factory when he mentioned that he had an idea for improving the tape cutting machine but help was at hand in the person of Mr J Edwards, the assistant works manager who, as a near neighbour, happened to be in Mr Hook's home about this time. As a result, and in line with the company's policy of worker participation, Mr Hook was given time to help develop his cutter. He was sent to the electricians' workshop where an apprentice electrician, Mr Strong, had been instructed to work together with him on constructing a working model. There is conflicting

evidence as to what, apart from the idea, Mr Hook contributed to this work but he spent the whole of the period of that shift in the workshop. Mr Strong selected a solenoid and a switch from those available in the workshop and in due course a model was constructed and a demonstration given to some senior staff. It became apparent that in order to make the cutter work efficiently, a larger solenoid and a more robust switch were required and these were duly ordered. Mr Hook's involvement with the device ended with that shift. The company however continued to develop the cutter further and to modify the existing tape cutting machine to receive the cutter and it was put into operation some time in 1980. It remained in operation until December 1983 when it was replaced by a pneumatically-operated cutter. That briefly is a summary of the origins of the invention and I think it would be convenient to turn now to the issues raised in the revocation proceedings.

In the pleadings, the applicants contend that:

(a) the invention as claimed in claims 1, 2, 4 and 5 is not new having regard to the disclosure of GB 750777;

(b) the invention as claimed in each and every claim of the patent is not new, or in the alternative, does not involve an inventive step having regard to GB 750777 and/or common general knowledge.

However, at the hearing, although Mr Prescott made a brief attempt to persuade me that claim 1 lacks novelty in the light of GB 750777, the main thrust of his arguments was concentrated on considerations as to lack of inventive step having regard to both GB 750777 and common general knowledge.

GB 750777 discloses a device for cutting a closure strip that has been folded over and stuck to the upper edges of filled bags in a packaging machine. A cutting edge is provided on one end of a cutting member shaped as a double level and pivotable in a

vertical plane about a bolt, the opposite end of the member being connected by a bifurcated rod (i.e. a plunger) to the armature of a solenoid. The solenoid is operable by one or other of two independent feelers, one of which closes a switch when the leading edge of a bag passes and the other of which closes a second switch upon passage thereby of the trailing edge of a bag. Activation of the solenoid causes retraction of the rod, against spring action, to pivot the cutting member so that the cutting edge thereof moves outwardly to co-operate with a fixed guide member to cut the closure strip with a scissor-like, rotary slicing action.

Clearly this device is more complex than the compact, simple device of the present invention with its fewer moving parts and no pivots. In addition, Mr Hook's blade moves with a simple linear motion in contrast to the prior art blade which moves through an arcuate path and cuts with a scissor-like action. Nevertheless it is the claims of the patent in suit that I have to consider and the question arises as to whether these distinctions are brought out in claim 1. The claim requires that the tape cutting blade be mounted on the plunger of the solenoid. This immediately gives rise to a problem in the meaning to be given to the term "mounted". Mr Prescott contended that there was no justification for reading this as "directly mounted" and he cited the House of Lords decision in Catnic Components Limited and another v Hill and Smith Limited, [1982] RPC 183, in arguing that a purposive construction be given to the claim. I am not at all certain that the problem faced in the Catnic case is analogous to the present one. In Catnic the question was whether the term "vertical", which has a precise meaning, can have this meaning stretched to include a minor variation from the vertical, whereas in the present case the question concerns the meaning of the word itself. But even if I were to assume the relevance of Catnic, I do not think that it provides much support for Mr Prescott. On page 243 Lord Diplock states:

"A patent specification should be given a purposive construction rather than a purely literal one derived from

applying to it the kind of meticulous verbal analysis in which lawyers are too often tempted by their training to indulge. The question in each case is: whether persons with practical knowledge and experience of the kind of work in which the invention was intended to be used, would understand that strict compliance with a particular descriptive word or phrase appearing in a claim was intended by the patentee to be an essential requirement of the invention so that any variant would fall outside the monopoly claimed, even though it could have no material effect upon the way the invention worked.

"The question, of course, does not arise where the variant would in fact have a material effect upon the way the invention worked. Nor does it arise unless at the date of publication of the specification it would be obvious to the informed reader that this was so. Where it is not obvious, in the light of then-existing knowledge, the reader is entitled to assume that the patentee thought at the time of the specification that he had good reason for limiting his monopoly so strictly and had intended to do so, even though subsequent work by him or others in the field of the invention might show the limitation to have been unnecessary. It is to be answered in the negative only when it would be apparent to any reader skilled in the art that a particular descriptive word or phrase used in a claim cannot have been intended by patentee, who was also skilled in the art, to exclude minor variants which, to the knowledge of both him and the readers to whom the patent was addressed, could have no material effect upon the way in which the invention worked."

In the present case, neither side has offered any evidence as to how a skilled man in the art would view the term "mounted". Nor is there any indication in the body of the specification as to what was intended to be covered, apart of course from the specific embodiment described. This embodiment therefore takes on an

important role in construing the claim. Applying the principle set out by Lord Diplock in the opening sentence of the second of the paragraphs quoted above, the only variants which would be encompassed by the word "mounted" would be those which would not have a material effect upon the way the invention worked. Thus one might envisage an intermediate member between the blade and the plunger whose only function was to facilitate the attachment of the two parts. Such a member would act only as a support and would not be capable of motion relative to the part to which it was attached. It is in this sense that I consider the term "mounted" may be construed as a variant to direct mounting. Where however there are intermediate moving parts, the variation would have a material effect on the way the invention worked and would not fall within the scope of the claim. Such, I consider, is the case in respect of the cited specification. Furthermore, a close inspection reveals that the cutting member is mounted on the guide member and cannot be said to be supported even indirectly by the rod or plunger. Claim 1 is therefore distinguished in this respect from the cited specification.

Another requirement of claim 1 of the patent in suit is that the cutting blade should pass through the feed path of the tape upon extension of the plunger. In 750777, the energisation of the solenoid causes the rod to be retracted to move the cutting member so that the cutting edge passes through the feed path of the strip. Thus, this requirement is not satisfied by the disclosure of 750777.

For the reasons set out above, the disclosure of 750777 cannot be read onto claim 1 of 2110146 and therefore I find that this prior specification does not destroy the novelty of claim 1.

I come now to the allegation of lack of inventive step. This is based on the disclosure in specification no. 750777 and on common general knowledge and in support of the latter basis the applicants have referred in their evidence to a number of publications. They have also referred in the context of common

general knowledge to an alleged use of solenoid operated cutters at another of their factories, in East Leake, in about 1960 and this is a matter I shall deal with later. The applicants' case begins with the assertion that the invention, which arises from the basic idea of Mr Hook, is wholly encompassed by the opening two lines of claim 1, that is "A tape cutting device comprising a tape cutting blade mounted on the plunger of a solenoid", the remaining components mentioned in the claim being so routine that they may for these purposes be ignored. This view was, to my understanding, shared by Mr Carr, as demonstrated in his cross examination of Mr Strong and it is one which I think is inescapable and amply borne out by the evidence. A solenoid has to have a switch and for use in a tape cutting machine it must clearly be controlled by a sensor which senses the gaps between pairs of boards. Thus the question to be answered is reduced simply to: was the idea which occurred to Mr Hook one which would have been obvious to a person skilled in the art? In these particular circumstances these last words need perhaps to be emphasised since Mr Hook is not a person skilled in the art with which we are concerned. What may appear to him to be an imaginative and inventive idea may be commonplace to the expert.

Among the evidence submitted by the applicants I turn particularly to the declaration by Dr P A Finlay, a chartered engineer with experience as line manager and in the field of automation and currently employed by the Fulmer Research Institute. After a brief dissertation on the subject of solenoids he asserts that the principle of the invention is self-evident, as illustrated in 750777 and a further GB specification 754349. Moreover, a training manual "Basic Industrial Electricity Part II", by Van Valkenburgh, Nooger and Neville published by the Technical Press in 1966, discusses on pages 2.28 to 2.46 the use of switches for detecting the presence of material to be cut and illustrates a simple solenoid-operated device for cutting. A further publication, exhibit PAF 2, which is an extract from a solenoid manufacturer's catalogue shows a number of applications of both rotary and linear solenoids including the mounting of a cutting



blade on the plunger of a rotary solenoid. Dr Finlay states that rotary solenoids are rather better for cutting devices because they impart a slicing action but linear solenoids are also used for their greater simplicity and cheapness. In his evidence in reply he also refers to Newnes Encyclopaedia of Electrical Engineering, page 700, where a number of applications of solenoids is listed, including cutting, with the statement that solenoids "are met in all branches of industry providing a force at the actual point required, easily controlled without a complicated set of levers or gears". Similar evidence is provided by Mr V A Marshall, manager of engineering services at British Gypsum, and other employees of the company. Mr Carr accepted, and on this I think there can be no doubt, that the teaching of the training manual and the disclosure in the encyclopaedia must be accepted as common general knowledge. Taking this together with the other publications and the body of evidence provided by the declarants, there is equally no doubt in my mind that the use of a blade attached to a plunger of a solenoid for cutting a material such as tape would be obvious to the person skilled in the art.

However, Mr Carr argued that this overlooks the situation which existed at the works at that time. The machine was frequently breaking down and boards were being damaged, with spare parts having to be ordered from America, and this state of affairs continued until the company took up Mr Hook's idea which in the event turned out to be successful and ran for some 3 years. Even though solenoid operated cutters were part of the stock in trade of the experts they did not find this solution to their problem. It was the very simplicity of the device, in contrast to the complex mechanism of 750777, which gave it inventiveness.

Mr Carr's argument that there was a problem in the art which remained unsolved until the advent of Mr Hook's device, was, I think, properly rejected by Mr Prescott. When considering whether there is a problem and who are the supposed experts it must surely be the industry at large and not one particular work place that

one must look at. There may be many reasons why the management at Kirkby Thore did not deal with the problem. What we have is the evidence from Mr Greaves, the board plant manager, and Mr Edwards, that at the time of Mr Hook's employment replacement of the spring loaded mechanical cutters was not being given priority consideration although it was recognised that replacement would be desirable at some time in the future. There is no evidence that their engineering staff were ever asked to produce an alternative arrangement and failed. If this were the case, Mr Carr would have some support for his argument but it would still not go far enough in the face of the proven common general knowledge.

As to the simplicity of the present invention, I agree that there can be invention in simplifying a known device such as that of 750777. But it would need to be shown that the two devices were intended to be used for the same purpose. In 750777, the cutter has to cut through wire as well as paper and a slicing action is desirable, hence the pivoting mechanism. But if it were only necessary to cut through a piece of paper, does it involve an inventive step to dispense with the complicated mechanism and employ a simple linear device when such devices are common general knowledge? I think not.

Having already expressed my view that the remaining features of claim 1 are routine, I conclude that the claim lacks inventive step. Since I have not found it necessary to take into account the evidence relating to the cutters at East Leake I need make no finding on this matter but I would observe that its proper place would have been in respect of prior use, not of common general knowledge.

As to the remaining claims, Mr Prescott confined himself to the evidence given by Mr Edwards in his first declaration, paragraph 12. The gist of it is that all the subsidiary features are inevitable and/or common practice. No evidence has been produced to contradict Mr Edwards and I can see nothing in these claims which would call his evidence into question.

To sum up therefore, I find that the invention claimed in all the claims is not a patentable invention within the meaning of Section 1(1)(b) in that it does not involve an inventive step and I order that patent no. 2110146 be revoked.

In the event that I am held to be wrong on this issue I need now to consider the other question, that is the entitlement to the patent.

It is common ground between the parties that the basic idea of attaching a cutting blade to the plunger of a solenoid, ie the idea as set out in the first two lines of claim 1, was devised by Mr Hook in his garage. However it would appear that his contribution to the invention ended there. Although he participated in some of the mechanical construction when working together with Mr Strong there is no suggestion that Mr Hook involved himself in the switching and sensing mechanism. This was an area which required electrical expertise and it was Mr Strong, and later other employees of the company, who devised and put together the necessary components. However, Mr Carr argued that these requirements were of such a routine nature that it was a simple matter for the company, once given Mr Hook's idea, to construct a working device, and it follows, if I understood him correctly, that they therefore had no part in devising the essence of the invention.

It may well be that a claim will include features which are obvious in the sense that their presence is essential for the invention to operate and they are of such a nature that it would not have mattered if they had been omitted from the claim. Claims do not specify every nut and bolt. However I do not think that the features with which we are concerned here are of such a nature. It requires a certain amount of expertise to appreciate that a particular type of switching mechanism is required for the solenoid cutter to operate successfully and I am not convinced that Mr Hook had the necessary knowledge. He was familiar with

the purely mechanical, spring-operated cutter and it is quite possible that he considered, if he gave it any thought at all, that the same type of control would have been suitable for his cutter. The contribution made by other members of the company is therefore in my view of significance and the company accordingly has entitlement to some of the invention.

The question then remains as to whether Mr Hook, being an employee of the company at the time he made his invention, is entitled to any part of ownership of the patent. Mr Prescott, having admitted that he was not especially concerned to press the Section 37 proceedings, did not dispute Mr Carr's case that Mr Hook was entitled under Section 39 to his invention. Section 39 reads:-

"(1) Notwithstanding anything in any rule of law, an invention made by an employee shall, as between him and his employer, be taken to belong to his employer for the purposes of this Act and all other purposes if -

(a) it was made in the course of the normal duties of the employee or in the course of duties falling outside his normal duties, but specifically assigned to him, and the circumstances in either case were such that an invention might reasonably be expected to result from the carrying out of his duties; or

(b) the invention was made in the course of the duties of the employee and, at the time of making the invention, because of the nature of his duties and the particular responsibilities arising from the nature of his duties he has a special obligation to further the interests of the employers undertaking.

(2) Any other invention made by an employee shall, as between him and his employer be taken for those purposes to belong to the employee".

Mr Hook's position as a "tape man" or a process worker as shown in his contract of employment makes it clear that it was not part of his normal duties to concern himself with development or

invention. And although he was allotted special time to work on his invention in the company's workshop, this was to prove an invention which he had already made at home. The situation therefore does not fall within the terms of Section 39(1)(a).

Turning to Section 39(1)(b), Mr Carr argued that this section is applicable only where the status of an employee is a relatively elevated one, such as a director, so that he owes special duties to the company. In support of this, Mr Carr read from the judgment of Mr Justice Falconer in Harris' Patent, [1985] RPC 19. The most relevant passage commences at line 50 on page 37:

"The wording of the paragraph, under condition (ii), clearly envisages that the extent and nature of the "special obligation to further the interest of the employers" will depend upon the status of the employee and the attendant duties and responsibilities of that status. Thus, plainly the position in this regard of a managing director whose obligation to further the interests of his employers undertaking of which he is the managing director, will no doubt, extend across the whole spectrum of the activities of the undertaking, will differ from that of, say, a sales manager".

Applying that judgment to the present case, I accept unequivocally Mr Carr's submission that it is inconceivable that British Gypsum could be entitled to this invention by reason of the special obligation arising from Mr Hook's status as their employee.

It follows therefore under Section 39(2) that the invention devised by Mr Hook, which is expressed in the first two lines of claim 1, belongs to him.

In the result, therefore, I find that Mr Hook is entitled to part ownership of the patent and that British Gypsum Limited have established their right under Section 37(2)(a) to be registered jointly with him as the co-proprietors of Patent No 2110146.

However, since they have succeeded in their action for revocation 72(1)(a), I do not propose to make an order for amendment of the register.

Having regard to all the circumstances of the two actions, I make no award as to costs.

Dated this 21<sup>st</sup> day of April 1987

N G TARNOFSKY

Superintending Examiner, acting for the Comptroller

