BL O/165/96

Mr P Hayward
3Y46

**PATENTS ACT 1977**

**IN THE MATTER OF** an application under section 13 and a reference under section 37 by Eric Russell Chappell in respect of GB Patent No 2238414 in the names of Ronald Thomas and Helmut Stohr.

Entitlement

Hayward 22/10/96

**DECISION**

GB Patent No 2238414 was granted to Mr Ronald Thomas and Mr Helmut Stohr, who are also named as the joint inventors. Before the patent was granted, Dr Eric Russell Chappell applied to the comptroller under section 13 of the Act for a certificate to the effect that he is the inventor, or at least a co-inventor. He also referred to the comptroller under section 8 of the Act the question of whether he is entitled to be granted the patent either alone or jointly with others. Since the patent was granted on 28 April 1993, by virtue of the provisions of section 9 the section 8 reference falls to be determined under section 37.

The patentees opposed the application and reference, and after the usual evidence rounds the issues came before me at a hearing on 24 September 1996, where Mr Lynd of the patent agents Edward Evans & Co represented Dr Chappell. The patentees, who had been prosecuting the case on their own account, did not attend the hearing, although they made clear in writing that they maintained their opposition.

I must first dispose of three preliminary matters. Firstly, paragraphs 8, 9 and 13 of Dr Chappell's statements of case appear to challenge the validity of the patent and call on the patentees to amend it. There is of course no jurisdiction under sections 13 or 37 to consider validity or amendment, and Mr Lynd agreed at the hearing that he would not be pursuing these issues. Secondly, Mr Lynd made clear that notwithstanding what was declared in the statements of case, he sought to have Dr Chappell instated as co-inventor and not as sole inventor. Thirdly, although there are two proprietors and named

inventors, Mr Thomas and Mr Stohr, I have been given hardly any evidence on Mr Stohr's role. Mr Stohr has not taken any part in these proceedings, and they have been conducted by both sides almost as though Mr Thomas were the sole proprietor and named inventor. In the event, I have not found it necessary to consider Mr Stohr's activities, and my decision should not therefore be construed as making any finding one way or the other on his role. However, for convenience and as a reflection of the way the case been presented to me, I have generally referred only to Mr Thomas in this decision. Where appropriate, these references should be taken to include Mr Stohr.

The patent relates to a computer system for typing Chinese or similar ideographic characters, using simple keyboard entry to build up a representation of a desired character coupled with computer assisted selection of the desired character from memory. It is primarily for use in word processing. As the patent specification explains, the problem that has beset the mechanisation of writing in ideographic scripts such as Chinese is that they use many thousands of different characters. Chinese typesetting systems have traditionally used a reduced set of characters with a complex keyboard typically having 1200 keys for character selection. More recent computer systems have used a variety of different systems for defining characters, for example, by their shape as drawn on a digitising pad, by their sound when spoken, or by the order and types of strokes executed in drawing them.

The system described in the present patent is of this latter type. Such systems rely on the fact that each Chinese character is written by adding one stroke after another in a standard order. This provides a means for identifying a character which is comparable to the spelling of words in linear scripts: the order of strokes in the Chinese character can be likened to the order of letters in a word. A "stroke" is defined as a single unbroken line formed between the point where the writing implement contacts the paper and the point where it is lifted from the paper.

Some previous systems using this approach have tried to identify a substantially complete set of different strokes. For example, 21 different strokes are identified in the Caldwell patent US 2950800, cited as prior art during the prosecution of the present patent. This

system is apparently considered to be difficult to use since it requires users to differentiate between strokes that are very similar. Other systems such as that described in GB 2066534, also cited, have used a much smaller number of different marks (typically five), each of which represents either a complete stroke of simple form or a sub-element of a stroke of more complex form. This system apparently creates difficulty since it is not always clear how a stroke should be broken into sub-elements, and so the user has to learn a set of rules before being able to operate it.

The present system adopts a different approach by grouping all possible strokes into a limited number of categories - preferably the eight categories illustrated in Figure 1 of the present patent. There is a first category (10) which comprises the group of all dots and very short strokes. Apart from this, each category represents the initial direction or directions of a stroke, and is used in place of the corresponding actual strokes to encode a character. The user simply considers in turn each of the actual strokes he would write in forming a character and keys in the appropriate category. The computer then searches its memory to find out which character or characters fits the sequence of stroke categories being entered by the operator and displays that character or those characters. The operator can then confirm that the correct character has been found, or select the right one if there are several possibilities. That in a nutshell is the essence of the present invention. The specification describes some refinements, but they do not affect the issue before me.

The invention therefore depends crucially on the principle that all the actual strokes which are used in writing Chinese characters can be easily assigned to one of a limited number of categories by any user familiar with Chinese writing. In claiming inventorship and proprietorship in the patent, Dr Chappell's case is in essence that before he himself became involved, Thomas had no knowledge or understanding of the concept of categories. What Thomas had, so Chappell claims, is an idea which was unworkable because Thomas wrongly believed there were only eight *strokes* in Chinese. Chappell recognised the error, but also recognised that by using Thomas's idea with *stroke categories* rather than strokes, a workable system could be built.

Before looking at the arguments, it will be helpful to summarise the history of events so far as they are uncontested. On 5 September 1988 Thomas filed a provisional patent application for his idea in Australia. On 18 October an Australian newspaper published an article about Thomas's idea. Chappell read it, and wrote to Thomas on 21 October expressing interest in working with him to develop the idea. Sometime between then and 9 November, they got together and agreed to cooperate. This cooperation did not survive long. They parted company, and since then they have been involved in extensive litigation, at least in Australia, over the system.

On 10 February 1989 Thomas and Stohr filed an application for an Australian petty patent, claiming priority from the provisional application but without naming Chappell as a co-applicant. On 5 September 1989 they filed an application under the Patent Cooperation Treaty (PCT) which eventually gave rise to the present patent. Again, this claimed priority from the Australian provisional and named Thomas and Stohr as the sole inventors. There are some differences between the original provisional application and the subsequent petty patent and PCT applications, but it is worth noting that all three contain the same Figure 1 showing what are now described as the eight stroke categories.

For Chappell's argument to succeed, he first has to show that Thomas was unaware of the idea of categories prior to Chappell's involvement. This is demonstrated, he says, by the absence in Thomas's provisional patent application of any reference to categories, in contrast to the petty patent and PCT applications. Looking first at the specification of the provisional application, it is true that with one exception it refers throughout only to "strokes". It is worth quoting a few exemplary passages, taken from page 2 lines 12-13, page 9 lines 6-8 and page 11 lines 2-6:

> "Chinese characters are all formed from unique combinations of eight uniquely-shaped basic elements or "strokes" . . . . . As illustrated in FIG. 1, the eight basic character strokes 10 through 18 which are used in the formation of Chinese characters . . . . . In the search mode, pressing one of the stroke entry keys 31 to 38 will initiate a search of the character storage unit 24 which will unflag all characters which do not begin with that stroke."

The exception is a passage on page 2 immediately following the first excerpt quoted above:

> "Each stroke type is characterised by its size and direction, and over fifty strokes may be used to form the most complex characters . . ."

It is also true that in the petty patent application, there is indeed one difference. The first excerpt has become:

> "Chinese characters are formed from unique combinations of strokes, each of which may be considered to fall into one of eight stroke-type categories."

However, the other passages quoted above, and indeed *all* the other references in the provisional to "stroke", are retained unchanged. Moreover, in the PCT application as filed, all the passages from the provisional application quoted above, and indeed all the references in it to "strokes", are unchanged. Even the change included in the petty patent application has been dropped. It was only later in the prosecution of the PCT application that many of the references to "strokes" were changed to "stroke-type categories".

Chappell's case is based on the allegation that there is a difference between what Thomas thought he had invented when he filed the provisional application and the invention which forms the subject of the present patent. The absence of any difference, so far as the concepts of strokes and stroke categories are concerned, between the provisional application and the PCT application as filed is a formidable hurdle for Chappell to overcome. In effect, he has to persuade me that the invention Thomas had in mind when he filed the provisional application is different from the invention he had in mind when he filed the PCT application even though the two specifications are, in all material respects, identical. I will turn to the evidence.

Thomas says that the original idea for the invention came to him after reading a book on reading and writing Chinese by one William McNaughton. In an index in this book, McNaughton orders the Chinese characters in dependence on the category into which the

first stroke of a character falls, then the second. McNaughton uses four categories, but each of them includes two alternatives. Thomas's statement that he got the idea from this book is not disputed by Chappell, and is confirmed by the fact that the eight shapes shown in Figure 1 of the provisional application correspond to the four categories, each with two alternatives, shown in the book. It is quite clear that the book is talking about stroke categories, not strokes, so *prima facie* Thomas must have known right from the start that his system relied on stroke categories.

However, Chappell argues that Thomas did not understand what he was reading and believed there were literally just eight strokes, not eight categories of stroke. He bases this argument on the repeated references to strokes, not stroke categories, in the provisional application and evidence which, Mr Lynd said, showed Thomas's knowledge of Chinese was very limited. I do not accept this argument. Firstly, even to me, with no knowledge of Chinese, the book is crystal clear, so I have difficulty believing Thomas could have misunderstood it even if his knowledge of Chinese was poor. Secondly, from even the most cursory glance at a few Chinese characters - and there are plenty in the evidence supplied - it is manifest that there are more than eight actual strokes in Chinese. Thus if Thomas had misunderstood the book, he would have discovered his error very quickly, as soon as he started to code a few characters. Thirdly, I do not consider the provisional specification to be at all inconsistent with the idea of stroke categories. It does have one specific reference, in the first passage quoted, to "stroke types", and I am satisfied that the intelligent reader would construe the term "strokes" everywhere else in the specification as referring to stroke types or categories, not to strokes pure and simple. Mr Lynd did argue that "uniquely shaped" in the first excerpt quoted is incompatible with the concept of categories each covering a number of stroke shapes, but I think it could equally well mean that each stylised stroke type is uniquely shaped. I also note with interest that my interpretation of the provisional specification is supported by the judgement dated 24 December 1993 of Cooper J in one of the Australian court cases. For example, in a passage on page 50 quoted by both sides in the present dispute, the judge says "the underlying principle in the provisional application was the alleged truism that there were eight basic stroke type categories used in Chinese writing". The judgement went to appeal, but the appeal judges quoted this very passage with approval.

I would observe at this point that in his affidavits Chappell quoted from the judgement of Cooper J in a highly selective way, taking passages out of their context and then trying to impart to them a meaning that goes beyond what the judge obviously had in mind. What the judge was saying is quite clear if the judgement is read as a whole, and my comment above reflects that.

I will now turn to three documents which, it is submitted, were created after the provisional application had been filed but before Chappell became involved. First, there is exhibit K to Thomas's affidavit of 7 February 1996 which purports to be a fax sent by him on 13 September 1988 to Jeff Yates of Paravet Instruments. Yates was evidently collaborating with Thomas in the development of the system at this time. The fax is a single sheet headed "Variations to Standard 8 Strokes" showing each of the eight shapes of Figure 1, with next to each, some examples of actual strokes subsumed within it. If authentic, this demonstrates beyond doubt that Thomas was conversant with categories at that date. Mr Lynd said there was doubt about its authenticity since it carries the number of the petty patent 583008 which did not exist until June or July 1989. It also carries a date 13 - 9 - 88 written boldly in the middle which Mr Lynd thought too convenient. Mr Lynd did not wish to say the document was a forgery but suggested it might be of later date than that accorded to it by Thomas. I do not think it is of later date. Clearly a fax of some sort was sent on 13 September 1988 since this date is recorded at the top of the page as part of the fax registration information. The suggestion that the meaning of the document may have been distorted by later addition of information does not appear to be tenable since there is nothing else to the fax apart from the groupings of actual strokes with stroke types. In my view the most probable interpretation of the presence of the later information is simply that it was added for identification purposes, perhaps in the earlier Australian court cases. This view is corroborated by a further copy of this fax filed in this Office by Mr Lynd himself with a letter dated 23 December 1992. It was attached (possibly inadvertently) to the back of a copy of the provisional specification and does not have the number 583008 or the bold date on it but is otherwise the same. I therefore regard this document as authentic and I consider it provides significant support for the contention that Thomas was conversant with categories at that date.

Secondly, there is Thomas's exhibit E, which purports to be a fax sent by Wei Yan at Paravet to Thomas on 22 September. Mr Lynd again invited me to consider whether the document may have been tampered with. It shows an analysis of about 20 different Chinese characters into the actual strokes used to construct them. Alongside each analysis are groups of numbers evidently assigning each of the actual strokes to one of Thomas's stroke types. Mr Lynd thought the groups of numbers were in the same hand as the numbers shown on exhibit K, the suggestion being that Mr Thomas who was the author of exhibit K has added these numbers at a later date, and that I should not accept this as a virgin document. Even though I am not an expert in calligraphy, I am satisfied the two sets of figures were not written by the same hand because there are noticeable differences between them. Those on exhibit K appear to me to be generally more elegant, with, for example a long crossing on the figure "4" and a fluid shape at the centre of the figure "3". The figures in the body of Thomas's exhibit E appear to be formed similarly with those in the message from Wei Yan on its header page. For example the figure "5" is constructed in a similar manner in both places. Thus I can find nothing to suggest that the figures on this exhibit have been added retrospectively. Mr Lynd also pointed out that the words "Wei Yan fax 22/9/88" have been added at the foot of the last page. I agree that this is probably a later addition, but as with the fax to Jeff Yates, I do not consider this detracts from the value of the document itself. Consequently, I do not have any grounds to doubt that this exhibit is genuine. It therefore appears to demonstrate that Wei Yan was sending Thomas information on the coding of characters according to a system of categorisation using Thomas's stroke types at that date.

It is a serious matter to falsify evidence that has been submitted under oath and a serious matter to allege without good reason that falsification has occurred. If Chappell sincerely thought Thomas had made additions to his exhibits K and E at a later date, it should have been possible for him to obtain evidence on the matter from Jeff Yates or Paravet, with whom, it would appear from the Australian court proceedings, he now collaborates. The absence of such evidence is significant.

Thirdly, there is Thomas's exhibit L, the newspaper article which first informed Chappell

about the invention. In a description of the system, it contains the passages "Mr Thomas ... said he discovered that all Chinese characters could be represented by a combination of only eight basic stroke forms" and "... selling the idea of reducing all its forms to eight geometric symbols takes some explaining." This appears to be an unequivocal description of the use of stroke types to represent real strokes and the author can only have obtained this information from Thomas, or by observation of the system in operation. Whilst I do not underestimate the ability of journalists to mis-report what they have learned, I find it difficult to believe that any journalist could have written these passages if what they had seen or heard was based on the concept of strokes rather than stroke categories.

Everything I have considered so far, therefore, provides in my view strong support for the presumption that Thomas's system was using the principle of stroke type categories before Chappell became involved. I will now turn briefly to some of the other evidence and arguments.

Thomas put forward two further faxes to show that he had appreciated the concept of categories before Chappell became involved, exhibits H and F dated 4 and 7 November respectively. Before I can weigh up the significance of these faxes, I need to establish whether they pre-date or post-date Chappell's involvement. The evidence on this is not as clear as it might be. In Thomas's affidavit of 7 February 1996 he says "a prototype apparatus based on the invention was shown to Eric Chappell on 9th November 1988. This was the first time he had seen the apparatus, and before he had any involvement with the invention." However, Thomas's own exhibit H, dated 4 November, says with reference to Dr Chappell: "... now that he has seen how it works, that *(sic)* he has declared his intention to do everything he can to have it become the standard Chinese entry system ...". This certainly implies Chappell had seen the prototype on or before 4 November. Chappell himself, on the other hand, does not say when he first met Thomas, or when he first discussed the project with him, nor does he say when he came to understand how the system worked or when he first saw it demonstrated. I find this a surprising omission from his evidence. However, he exhibits a diary of day-to-day events headed "Time spent on Chinese project since input began", and the earliest entry in this is

8 November, when he records spending 8 hours at Paravet. Prior to this, there is merely a list of undated preparatory work within his own university adding up to less than 6 hours. This diary is not inconsistent with Chappell *learning* about the invention prior to 8 November, but it suggests he was not actively involved till then. This view is reinforced by what purports to be a statement made by Chappell on 29 January 1992 in one of the Australian court actions, filed by Thomas in support of his counterstatement. I do not want to attach too much weight to it because although part of the document was later exhibited to Thomas's affidavit, the part I wish to quote was not. Thus whilst the document has not been challenged, strictly it was not sworn as evidence in these proceedings. However, in paragraphs 24, 25 Chappell states that up until 8 November 1988, he thought Thomas's "program was complete and that it had resolved the many problems which affected other Chinese language word processors", and that it was only on that day that he says he became aware the program was not complete and that there were a number of problems facing it. On this somewhat limited evidence, I suspect that the faxes of 4 and 7 November post-date Chappell's inspection of the prototype but pre-date any real involvement in the project, though I cannot be certain. Because of this uncertainty, I am reluctant to place any reliance on these faxes as evidence of what Thomas's system was before Chappell got involved.

A more significant piece of evidence is an exhibit to Chappell's own affidavit of 11 September 1995. It is a statement dated 13 August 1992 that he submitted to the Australian courts in the proceedings there. Paragraph 16 reads " . . . Although I started formulating the rules using the eight-stroke type categories identified by Thomas, the allocation of strokes to each of the stroke-type categories was done by me with the assistance of Fred Hong." This seems to be a clear acknowledgement by Chappell himself that the concept of using categories was Thomas's. Mr Lynd argued that this was simply a mistake by Chappell, bearing in mind that the statement was made in the context of copyright litigation where ownership of the invention was not in issue. Given the weight of other evidence, I am not convinced.

Mr Lynd also argued that if Thomas had understood the fundamental error in his original patent application before Chappell got involved, he would have made a fresh application

for a patent, correcting the error, before November. The fact that he did not do so until February, Mr Lynd submitted, was because he did not realise there was an error until Chappell pointed it out. I reject this argument. If the petty patent application was filed to correct the alleged error, the relevant changes made in that application would have been repeated in the subsequent PCT application, and they were not. Further, if the filing was prompted by Chappell explaining to Thomas that the invention in the provisional application was unsound, it would have been made in November, not February, since I cannot believe Chappell failed to tell Thomas about his alleged misconception for three months. Indeed, in explaining Thomas's exhibit H, Mr Lynd himself argued that Chappell had told Thomas by 4 November. These considerations reinforce the view that Chappell's arrival on the scene did not change the basic invention.

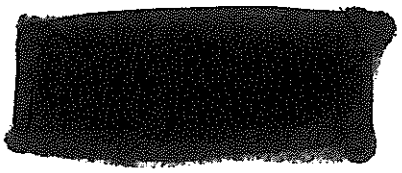
Finally, I have been given a fair amount of evidence about the work done by Chappell between November 1988 and February 1989. What this seems to show is that Chappell carried out detailed development work to draw up a set of rules for users of Thomas's system, such as rules on how to assign actual strokes to one of the stroke type categories. Chappell provides an explanation of this work in paragraph 14 of his second affidavit for example. Thomas agrees that Chappell did develop a set of rules, and I am quite prepared to believe, as Mr Lynd submitted, that work on such rules was essential in order to develop the invention into a marketable product. However, the patent specification does not go that far. The system as set out in the specification does not appear to depend on the use of any particular set of refined coding rules. Indeed, the specification says nothing whatsoever about any rules. Thus whatever contribution Chappell may have made in this respect, it was not a contribution to the invention as set out in the patent specification. This contribution does not therefore entitle Dr Chappell to an interest in the patent.

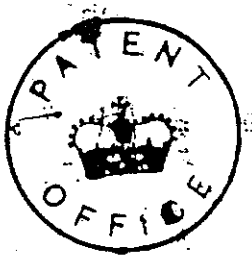
In summary, I find that Dr Chappell did not contribute the concept of grouping strokes into stroke type categories to the invention, that he is not entitled to a proprietary interest in the patent, and that he is not entitled to be named as inventor.

As Dr Chappell's reference and application have both failed, the proprietors are entitled to costs. Accordingly, and in accordance with the scale usually used in proceedings before the comptroller, I direct Dr Chappell to pay the proprietors £450 as a contribution towards their costs.

Under the Rules of the Supreme Court, any appeal from this decision should be lodged within 6 weeks.

Dated this 22 day of October 1996






**P HAYWARD**

Superintending Examiner, acting for the Comptroller

**THE PATENT OFFICE**