



BL O/005/06

6 January 2006

## PATENTS ACT 1977

APPLICANT                      Kim Lesley Ridgeway

ISSUE                              Whether patent application number  
GB0124754.3 complies with sections  
1(1) and 1(2)

HEARING OFFICER              B Westerman

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## DECISION

### Introduction

- 1 Patent application GB0124754.3 entitled "Mathematical Teaching and Learning Aid" was filed on 16 October 2001 in the name of Kim Lesley Ridgeway.
- 2 On 7 October 2002, a request for preliminary examination and search was filed. A search report issued on 11 April 2003 with a covering letter which explained that, in the view of the search examiner, the differences of the invention from the six documents cited might be considered purely aesthetic and/or may not provide an inventive step. The letter warned that these issues would be considered further at substantive examination.
- 3 Following publication of the application, an examination report issued with an Office letter on 5 November 2004 which did indeed formally raise these issues with explanation. There followed two further rounds of correspondence. In the report attached to the second Office letter the examiner drew attention to a further patent document in support of his objections. I will return to the detail of the issues raised below. It became clear that the examiner and Mrs. Ridgeway could not agree, and so in the report associated with the third Office letter, dated 10 August 2005, the examiner offered a hearing. This offer was accepted, and a hearing was held before me on 16 December 2005, where Mrs. Ridgeway appeared in person accompanied by her husband. The examiner, Mr. Jefferson, also attended.

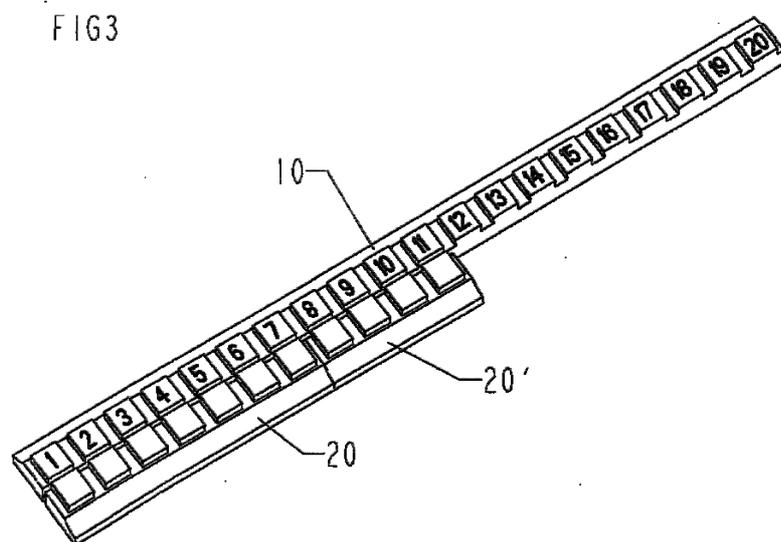
### The application

- 4 The invention relates to a device for teaching and learning mathematics. Mrs. Ridgeway and her husband gave me an enthusiastic and clear demonstration of an example of the device at the hearing.
- 5 Claim 1 of the application reads as follows:

“1. A device used for mathematical teaching and learning a plurality of elongate rods each elongate rods each rod having a number of segments defined by indented channels extending across the width of the upper surface of said rods, wherein at least one of said rods acts as an index rod having mathematical weighting defined by indices applied to the upper surface of said segments, said remaining rods acting as alignment rods being assigned mathematical weighting by the number of segments such by relative alignment and registry of at least one of said elongate alignment rods with at least one said index rods then a mathematical operation ensues to yield a result by said mathematical operation.”

There follow a number of appendant claims, and claims to methods of performing mathematical operations using the device.

6 The following drawing is Figure 3 from the application.



The alignment rods 20 and 20' are of different lengths and represent different integers. By aligning two or more of these alignment rods adjacent the index rod carrying the numeral indicia, mathematical operations can be demonstrated. For example, as shown,  $7 + 4 = 11$ . By suitable alignment of rods, and as explained in the specification, the operations of addition, subtraction, multiplication and division can be demonstrated and the results shown.

### The issues and argument

7 The issues discussed before me were whether the application met the requirements of section 1(1) that the invention involves an inventive step; and whether the exclusions of section 1(2) as to presentation of information and aesthetic creation mean that this application is not patentable.

- 8 As for the obviousness objection, the examiner, in his first report, summarized his reasoning, based upon the original six documents cited, as follows:

“All of the above documents describe mathematical teaching aids comprising a reference/indexing measure and a variety of number blocks having a length related to their numerical value. The apparatus of these documents and their method of use is similar to that described and illustrated in your application.

However, none of these documents describe or illustrate rods having grooves across their upper surface. Nevertheless this seems an obvious feature to add. Grooves to indicate units of measurement are well known on rulers and it seems an obvious feature to add to the rods/blocks of the above documents. This being the case the apparatus as defined by claim 1 is believed to lack an inventive step, i.e. it is an obvious alteration to make to the apparatus disclosed in the above documents.

Furthermore, the features of the remaining claims are also considered to obvious ways of either making the apparatus or using the apparatus, as such features are well known.”

- 9 He raised the issue of patentability under section 1(2) with the following explanation:

“It appears that the distinguishing feature of your idea, the channels moulded into the rods, may be considered to be excluded from patentability on either of the above grounds. Indeed the use of language such as “chunky” (page 3 of your description) suggests that the only function of the particularly deep channels illustrated is aesthetic.”

- 10 I think it is fair to say that this still represented his view at the hearing, except that, in response to the applicant disputing the use of grooves in such devices, at the second report, he undertook a further search which revealed a Japanese patent document which shows a set of blocks whose lengths correspond to a series of integers, for use in an arithmetic learning device. As emphasized in the English language abstracts available, and in the drawings, this clearly specifies the use of grooves between the unit lengths of a block representing an integer more than one.
- 11 At the hearing, Mr. and Mrs. Ridgeway strongly argued that, to their knowledge, their device clearly differed from any such device currently on the market, and told me that they had received orders from a large high street shopping chain for their device. They also reported a very positive comment from a Professor of Mathematics as to the clarity of their device. They said that the grooves of their device being prominent and precise had a distinct advantage for the perception of “placement value”, and drew distinctions from the cited documents which they said did not have the same precision, clarity and reinforcement for the user. In particular, they made the point that not all of these have segments delineated even by markings on some of the blocks. They also argued that it could not be obvious to provide grooves as this would have been disclosed in the prior art.

12 It emerged, in my view, at the hearing, that this was the central feature upon which they relied as a distinction. They were at pains to stress that part of the difficulty that they had addressed in development for sale was to find a way and a supplier able to produce these grooves precisely positioned and sized. As their submission developed, I asked them if they could suggest a way to define this better in the claim. A number of ideas were floated, with the assistance of the examiner when they requested help. After some discussion of possibilities, however, it was his view that there was no disclosure which could more precisely define the grooves contained within the specification as filed. Mr. and Mrs. Ridgeway also could not come up with anything. Whilst they were able to talk about possibilities, in no case could they point to any part of the original disclosure to define or emphasise the distinction that they argued for

### **Assessment**

13 Section 1(1)(b) states that

*1 – (1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –*

*(a) .....*

*(b) it involves an inventive step*

*(c) .....*

and this is explained by section 3 which states

*3. An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).*

14 For current purposes, the last part of section 3 is not significant since all of the documents fall into the section 2(2) area – that is they were published before the priority date of the invention.

15 Section 1(2), for present purposes, states

*1 – (2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of –*

*(a) .....*

*(b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever*

*(c) ....*

*(d) the presentation of information*

*but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.*

- 16 It is also settled law that if a claim includes within its scope anything which does not meet these requirements, then the claim as a whole is unacceptable.
- 17 Considering first the issue of obviousness, I must first identify the claimed inventive concept; then the disclosure of the prior documents; determine the difference(s); and decide whether the difference(s) would be obvious to the skilled man.
- 18 Claim 1, quoted above seems to me to set out what is required for the invention – i.e. the plurality of rods, as there specified, all providing “segments” defined by indented channels extending across the width of the upper surface of the rods, the alignment rods being suitable to align and register with the index rod.
- 19 I have carefully considered the content of the six originally cited documents, and agree with the examiner that they all disclose devices which provide something which could be characterized as the “index” rod, and parts which could be characterized as “alignment” rods. All of them I find to disclose the use of an index rod and alignment rods in a way analogous to, and teaching the performance of at least some of the same functions as, the present invention. I also, however, take the point, raised at the hearing by Mr. and Mrs. Ridgeway, that not all of these have segments delineated even by markings on some of the blocks. However, two of them – GB 2326960 A and US 5421732 – do clearly include markings to demarcate “segments”. The GB document refers to these being separated by markings, and the US document clearly shows markings. In the absence of markings on the other documents to reinforce their numerical value denoted by the length of the blocks, I accept the argument put forward by Mr. and Mrs. Ridgeway and do not feel that these provide a basis for objection.
- 20 I also find that none of these six documents, and particularly the two that I identify by number above, specifically disclose the use of grooves or indented channels to demarcate segments in these rods. However, I am equally convinced that grooves used to define markings and segments of things like rulers and scales are well-known, and I also find that the Japanese document JP 10024174 shows that this is known in a device for learning arithmetic.
- 21 Thus, in my judgment, the GB and US documents identified by number above each show segments delineated on the blocks. The use of grooves or channels to demarcate areas on a scale or ruler is in my view so commonplace that to utilize this in the known arrangements performing the same function is clearly obvious. Furthermore, the Japanese document clearly shows this in a very similar context. As to the argument that “if it were so obvious, why did they not say so?” it seems to me that the inventions of the GB and US documents are concerned with the higher-level arrangement of the parts to perform the function rather than the detail of the way of marking the segments. Focusing as they do on this higher level, I do not read into these

specifications any significance given by the respective patentees to the way in which these markings are to be done. On the other hand, the Japanese document does have this disclosure. I consider that a skilled man would not be lead to believe that the well-known option of using grooves is precluded by the teaching of the GB and US documents, and would read these as allowing any known method of providing markings, including the use of grooves, and be reinforced in his view by the content of the JP document.

- 22 Turning to the submission concerned with the success in commercial terms, and praise from others, having seen the device, I can well appreciate why this is so. However, I am convinced by what I heard and saw at the hearing that this is really concerned with the particular size and positioning of the grooves, a feature that is not currently reflected in the wording of the claims.
- 23 Having carefully considered all of this, I come to the conclusion that the invention as defined in claim 1 as currently worded is obvious in the light of GB 2326960 A and US 5421732, when considered in the light of JP 10024174 and/or common general knowledge.
- 24 As for the objection taken under section 1(2), I am persuaded by the eloquent exposition of Mr. and Mrs. Ridgeway at the hearing that the appearance given to the device by the adoption of grooves or channels has the function of facilitating the use of the device and the perception of the user to reinforce the training. I therefore find that the device is not an aesthetic creation as such, and although the demarcation provided by the channels could be said to be to do with presentation of information, it is not in my view to do with the intellectual content of the information but with a feature which is to do with a better perception of the principle. I therefore find that this objection is not well-founded.
- 25 Given my decision above as to the obviousness of claim 1, I must now turn to whether there is any possibility of amendment to introduce an inventive step. I have carefully considered the entire content of the specification, and as I said above, the issue was explored at some length at the hearing. Nothing was drawn to my attention at the hearing which was disclosed in the specification as originally filed which could, in my judgment, provide the necessary inventive step. Regretfully, I can not perceive of any disclosure in the specification which could bring out the distinction argued for. In this situation, I can see no point in allowing any further opportunity to try to amend to meet this decision.

### **Summary**

- 26 For the reasons given above, I refuse the application as not meeting the requirement of section 1(1)(b) as I have found that the invention as defined in claim 1 is obvious in the light of GB 2326960 A and US 5421732, when considered in the light of JP 10024174 and/or common general knowledge. I have also found that there is no prospect of any saving amendment, and therefore do not offer an opportunity to amend. I have, however, found that the invention is not excluded under section 1(2).

### **Appeal**

27 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal must be lodged within 28 days.

**BRUCE WESTERMAN**  
Deputy Director acting for the Comptroller