Commissioner's Decision #1229
Décision du commissaire #1229

TOPIC: J-10

SUJET: J-10

Application No: 2,085,116
(International Classification:G06F-007/556)
Demande No: 2,085,116
(Classification internationale: G06F-007/556)

COMMISSIONER=S DECISION SUMMARY

C.D. 1229   .. App'n 2,085,116

Non-statutory subject matter

The examiner rejected this application under the provisions of Sections 2 and 27(3) of the

Patent Act on the basis that what is   claimed is nothing more than a general purpose computer

which is programmed to calculate logarithms.   The Board determined that the application

discloses and claims an apparatus which is specifically designed to carry out the applicant=s

new method of calculating logarithms.

The application was returned to the examiner for further prosecution.

Patent application number 2,085,116, having been rejected under Rule 47(2) of the Patent Regulations, the Applicant asked that the Final Action of the Examiner be reviewed. The rejection has consequently been considered by the Patent Appeal Board and by the Commissioner of Patents. The findings of the Board and the ruling of the Commissioner are as follows:

Agent for Applicant

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This decision deals with the Applicant's request for a review by the Commissioner of Patents of the Examiner's Final Action dated January 11, 1995 on patent application number 2,085,116 (International Classification G06F-007/556) filed on June 17, 1991 and entitled "DEVICE FOR EVALUATING LOGARITHMS@. The Applicant is Motorola Inc., assignee of inventor Brett L. Lindsley. In the Final Action, the Examiner rejected all of the claims of the application, as well as the whole application, for lack of patentable subject matter in view of Section 2 and Section 27(3) of the Patent Act. A hearing was held on November 26, 1997, at that time, the Applicant was represented by Mr Gary O=Neil of Gowling, Strathy & Henderson.

The application relates to an apparatus which processes an input value to provide an output value which is a logarithm value, having a desired base, of the input value. Figure 1A appearing below shows a block diagram of the computer hardware implementation of the invention.

Claim 1 reads as follows:

An apparatus for processing an input value to provide an output logarithm value of the input value, such that the output logarithm value has a desired base, comprising:

A) modification means, responsive to the input value, for generating an approximation value wherein the approximation value is selected from a predetermined set of values that is a group of values predetermined by selected rounding algorithms;

B) first function generator means comprising a read-only memory (ROM), and being coupled to the modification means, for utilizing the approximation value to determine a first intermediate value;

C) error generator means, responsive to the input value and coupled to the modification means, for utilizing the input value and the approximation value to generate an error value, wherein the error generator means includes at least:

1) first division means, responsive to the input value, and coupled to the modification means, for utilizing the input value and the approximation value to obtain a first quotient value of the input value and the approximation value; and

2) subtraction means, coupled to the first division means, for utilizing the first quotient value to determine the error value, the error value substantially being a difference of the first quotient value and the number one;

D) correction evaluator means, coupled to the error generator means, for utilizing the error value to determine a correction value; and

E) combining means, coupled to the first function generator

means and the correction evaluator means, for utilizing the first intermediate value and the correction value to obtain the output logarithm value, wherein the combining means coupled to the first function means and the correction evaluator means further includes:

   1)   second addition means, coupled to the first function generator means and the correction evaluator means, for determining a third sum of the correction value and the first intermediate value;

   2)   fourth function generator means, responsive to the desired base of the output logarithm value, for determining a third logarithm value, wherein the third logarithm value is substantially a natural base logarithm of the desired base of the output logarithm value; and

   3)   second division means, coupled to the second addition means and the fourth function generator means, for determining a second quotient of the third sum and the third logarithm value, wherein the second quotient of the third sum and the third logarithm value is substantially the output logarithm value having the desired base.

In his Final Action the Examiner rejected all of the claims as well as the application itself stating, in part, that:-

   The refusal of all of the claims as well as the remainder of the application is maintained for lack of patentable subject matter in view of Sections 2 and 27(3) of the Patent Act.

   The application teaches a mathematical technique for the evaluation of logarithms.

   What is claimed is a computing apparatus with no novel features for it embodies nothing more than particular functions of a general purpose computer with the purpose of calculating logarithms.

   ....

   The apparatus claimed merely solves mathematical formulae which are assimilated to a Amere scientific principle or abstract theorem@.

   ....

   The applicant and the examiner are on common ground with respect to the statement made on page 13 of the disclosure: Ait is clear that the present invention may be implemented entirely in software@. (References to software implementations are also made on pages 1 and 4 of the disclosure.)

   In other words the specialized computing apparatus claimed is not all relevant to the alleged invention and a general purpose computer running software specific to the alleged invention can be an alternative in that regard.

In its reply to the Final Action, the Applicant has provided a detailed review of the development of the law with respect to the patentability of computer related inventions, as outlined in decisions of various United States courts. It was also stated that the only Canadian court decision with respect to computer related inventions, Schlumberger vs. The Commissioner of Patents 56 C.P.R. 2d (p. 204), is not relevant in the present case.
The Applicant stated, in part, that:

      The Examiner makes reference to and apparently relies on the decision of the Federal Court of Appeal in Schlumberger vs. The Commissioner of Patents 56 C.P.R. 2d (p. 204). As will be set forth in more detail hereafter, this decision is considered to be irrelevant to the present case in that

it relates merely to the issue of the patentability of a computer program
<u>per se</u>.

. . . .

.... The first and to date the only decision for guidance in this area is
the decision of the Federal Court of Appeal in <u>Schlumberger Canada Ltd. vs.
The Commissioner of Patents</u> (56 C.P.R.) (2d) 204.   The <u>Schlumberger</u>
application related primarily to the production of data useful in geological
exploration.   In carrying out the process, certain input measurements
derived from test holes were recorded on magnetic tape and subsequently fed
into a computer.   The computer was programmed according to prescribed
mathematical formulae, and the information was converted by the computer
into useful information such as graphs or figures of tables which could be
read by geologists.

. . . .

        It is quite evident from the above that this case is diametrically
opposed as far as its facts are concerned to the <u>Schlumberger</u> case referred
to above wherein an attempt was made to obtain protection for a method of
operating a computer in a selected manner to accomplish certain mathematical
calculations, the end results being merely numbers useful in making certain
decisions by skilled geologists.   In contrast to <u>Schlumberger</u>, the present
application describes and claims an apparatus which, <u>when considered as a
whole</u>, is new and useful as required by Section 2 and which is not a mere
scientific principle or abstract theorem as prescribed by Section 27(3).
Applicant=s claims do not pre-empt the use by others of any form of program
or algorithm <u>per se</u>; they only seek to pre-empt the use of the device set
forth in the claims.

The Board must therefore decide whether or not Applicant=s invention is directed to an invention

which is patentable under Sections 2 and 27(3) of the Patent Act.

Invention is defined in Section 2 of the Patent Act as follows:

..........any new and useful art, process, machine, manufacture or composition of
matter, or any new and useful improvement in any art, process, machine,
manufacture or composition of matter.

Subsection 27(3) of the Patent Act read at the time of the Final Action as follows:

No patent shall issue for an invention that has an illicit object in view, or for any
mere scientific principle or abstract theorem.

The Board has done a complete review of the application in order to determine exactly what

has been discovered.   According to the Applicant=s disclosure, the alleged invention is directed

to a method and apparatus for processing an input value to provide an output logarithm value

of the input value, the output logarithm value having the desired base.   During the prosecution,

the application was amended to remove the word Amethod@ from the title and all of the claims

are directed to an apparatus.

From this review, the Board has determined that the Applicant has discovered a method of manipulating numbers to arrive at the desired number, has converted this method into a series of method steps and finally has developed a device to carry out this series of steps.

A method which does nothing more than set out the step needed to solve a mathematical problem is not patentable.

An apparatus claim which consists exclusively of a series of means-plus-functions statements is usually considered to be nothing more than a Adisguised@ method claim and if the method itself is not patentable, this type of apparatus claim is also not patentable.

As can be seen from the wording of claim 1, the apparatus disclosed and claimed in the instant application is more than just a series of means-plus-function statements. It includes, in section B), function generator means which comprises a read-only memory which is coupled to the modification means. This is a specific piece of computer hardware and, as such, this claim is necessarily limited to a specific configuration of at least one physical element as well as some elements which are ordinary components of a well-known digital computer which are programmed to carry out desired functions.

The Board has concluded that the Applicant has invented an apparatus which is specifically adapted to carry out the method of manipulating numbers which the Applicant has developed. This device, while it does contain many means-plus-function statements, also includes at least one specific piece of computer hardware which is a real physical element. As a result, the

Board believes that the claims of this application go beyond being directed to a mere scientific principle or abstract theorem.   The Applicant is not seeking to exclude others from using the method itself but is seeking to exclude others from using the specific device which is claimed.

In summary, the Board recommends that the refusal of all of the claims as well as that application itself be withdrawn and that the application be returned to the examiner for further prosecution.

P.J. Davies   M. Howarth   M. Wilson

Chairman   Member   Member

I concur with the findings and the recommendation of the Patent Appeal Board.   Accordingly, I return the application to the Examiner for further prosecution consistent with this decision.

S. Batchelor

Commissioner of Patents

dated at Hull, Quebec

this 3rd day of November 1998