Commissioner's Decision #1231 Décision du commissaire #1231

TOPIC:	J-10
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Application No: 2,085,228 (International Classification:G06F-007/556) Demande No: 2,085,228 (Classification internationale: G06F-007/556)

C.D. #1231

COMMISSIONER'S DECISION SUMMARY

C.D. 1231 .. App'n 2,085,228

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 exponentials. 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 exponentials.

The application was returned to the examiner for further prosecution.

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application number 2,085,228, 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

Gowling Strathy and Henderson P.O. Box 466, Station D Ottawa, Ontario K1P 1C3 This decision deals with the Applicant's request for a review by the Commissioner of Patents of the Examiner's Final Action dated August 4, 1995 on patent application number 2,085,228 (International Classification G06F-007/556) filed on June 24, 1991 and entitled "DEVICE AND METHOD FOR EVALUATING EXPONENTIALS@. 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 which time, the Applicant was represented by Mr Gary O=Neil of Gowling, Strathy & Henderson.

The application relates to a method and a device for efficient evaluation of exponential functions. Figure 1A appearing below shows a block diagram of a computer hardware implementation of the invention.

Claim 1 reads as follows:

A device for processing an input value to provide an output exponential value of a desired base raised to a power of the input value, comprising:

A) first adjusting means coupled to receive the input value, a predetermined base of a first exponential value, and the desired base for obtaining a first scaled value;

B) modification means coupled to receive the first scaled value for generating an approximation value;

C) read-only memory (ROM) coupled to the modification means for determining the first exponential value having the predetermined base;

D) error adjusting means coupled to the first adjusting means and the modification means for generating an adjusting error value E) correction generating means coupled to the error adjusting means for determining a correction value; and
F) combining means coupled to the read-only memory and the correction generating means for substantially obtaining the output exponential value such that the desired base is raised to the power of the input value.

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

The refusal of all 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 evaluating exponentials.

What is claimed is a numeric processing apparatus embodying nothing more than a particular function of a general purpose computer with the purpose of evaluating exponentials.

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It is held that a numeric calculating method is not patentable subject matter be it implemented in either computer hardware or software.

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

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It is obvious to anyone skilled in the art that what the alleged invention is teaching is a mathemaical algorithm which is claimed as a device. It is this mathematical algorithm that the application teaches and which has in fact been discovered. The fact that it is claimed as a device - or possible (sic) as a com[puter program - is irrelevant to the question A...what, according to the application has been discovered...@.

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, <u>Schlumberger vs. The Commission of Patents</u> 56 C.P.R. 2d (p. 204), is not relevant in the present case.

The Applicant stated, in part:

The Examiner makes reference to and apparently relies on the decision of the Federal Court of Appeal in <u>Schlumberger vs. The Commission of Patents</u> 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 (computer software related innovations) is the decision of the Federal Court of Appeal in <u>Schlumberger vs. The Commissioner</u> of Patents 56 C.P.R. 2d (p. 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 tapes 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.

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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 result 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, when considered as a whole, 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 per se; 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 device for processing an input value to provide a fast and efficient determination of an output inverse trigonometric function value of the input value. During the prosecution, the application was amended to remove the word Amethod@ from the title and all of the claims are directed to a device. From this review, the Board has determined that the Applicant has discovered an algorithm for use in evaluating exponential functions, has converted this algorithm into a series of method steps and finally has developed a device to carry out this series of steps.

It is widely accepted that it is not possible to obtain a patent containing claims to an algorithm per se. Similarly, a method which does nothing more than set out the step needed to solve the algorithm 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 device disclosed and claimed in the instant application is more than just a series of means-plus-function statements. It includes, in section C), 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 a device which is specifically adapted to carry out the method of solving the algorithm which the Applicant has developed. This device, while it does contain many means-plus-function statements,

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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 algorithm 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/98