COMMISSIONER'S DECISION

Section 2: **Segmented Storage Logging and Controlling**

Storage, indexing and retrieval of text data for text processing machines such as printers in which the arrangement reduces accessing time and minimizes wear on electromagnetic components as compared to those of current systems complies with the requirements of Section 2.

Final Action: Reversed

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Patent application 291,920 (Class 354-237), was filed on November 29, 1977 for an invention entitled SEGMENTED STORAGE LOGGING AND CONTROLLING. The inventor is Gavin L. Douglas, assignor to International Business Machines Corporation. The Examiner in charge of the application took a Final Action on February 25, 1981 refusing to allow it to proceed to patent.

The subject matter of this application relates to the storage, indexing and retrieval of text data for text processing machines such as printers.

Figure 1 is shown below.

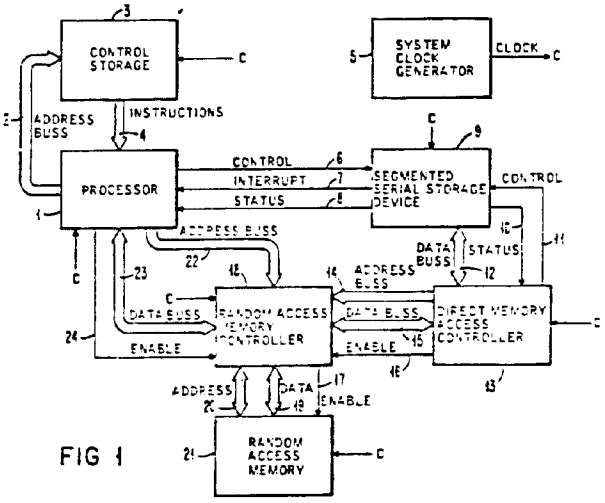

FIG 1

Processor 1 transmits control signals via line 6 to segmented serial storage device 9. Storage device 9 provides interrupt and status information through lines 7 and 8 back to processor 1. Random access memory 21 provides stored text data for text creation and revision and serves as a buffer in relocating data on storage device 9. Random access controller 18 controls access to

memory 21 through line 17, data buss 19 and address buss 20. Transfers of data directly between storage 9 and memory 21 without involving processor 1 are attained by the use of direct memory access controller 13.

In the Final Action the Examiner rejected the claims under Section 2 of the Patent Act. That action stated (in part):

> ...
>
> Page 11 lines 24 to 28 of the application indicate that one practical embodiment of the disclosed flow diagrams could be implemented by anyone having skill in the art of computer programming. In this embodiment a general purpose digital computer would be programmed to access a segmented serial storage device and log the utilization of this device as set out in the claims. In spite of lines 21-24 of page 11 no new apparatus has been explicitly disclosed. The claims therefore encompass and preempt a program and thus remain rejected as being directed to non-statutory subject matter under Section 2 of the Patent Act.
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> In the last paragraph of page 1 of the letter of January 14, 1981 applicant states that "the Patent Office's position, as stated in the first column of page xxvi of the decision, is not intended to be exhaustive of all possible claims involving, however incidentally, the use of a computer". It is held that the use of a computer in the present case is not incidental. On page 11 line 28 a general purpose computer is said to be programmed to operate "in accordance with the concepts of the invention.". The computer therefore is central to the embodiment of page 11 lines 24-28. The Commissioner's decision published in the CPOR of August 1, 1978 is therefore considered relevant to the present claims.
>
> In the first paragraph of page 2 of the same letter applicant states that "the claims are drawn to subject matter which is otherwise patentable as being within Section 2...". For the claims to be drawn to patentable subject matter it would be necessary that patentable subject matter be disclosed. Applicant has only disclosed flow diagrams in any detail. Such diagrams are not patentable, as set out in the previous report. What then is the patentable subject matter to which the applicant refers? The Commissioner's decision referred to above sets out that the patentable advance must be in the apparatus itself. In the embodiment of page 11 lines 24-28 the apparatus is a general purpose digital computer. The novelty of this embodiment lies in the program, not in the apparatus. The claims which encompass this embodiment thus encompass non-statutory subject matter.

In response to the Final Action the Applicant stated (in part):

> ...
>
> In accordance with the invention, a system log, indicative of the utilization of all storage media segments and portions thereof, is physically stored on the storage medium itself. A plurality of portions of this storage medium are dedicated for the usage of such logging data only. At the termination of each physical storage of text data on such storage medium, the most current logging data indicative of the utilization of all of the storage medium segment is physically stored on only one of the portions of the storage medium dedicated to the storage of such logging data.

More particular aspects of the present invention are directed to the physically tangible operation of recording the most current logging data on one dedicated storage medium portion physically closest to the storage reading and recording transducer which has just recorded the data to be stored on the storage medium. It is this that provides the physical advantage of minimizing the time for accessing the dedicated portion on which the logging data is stored as well as minimizing wear on the electromechanical accessing components.

It is again submitted, in other words, that the substance of the present invention includes the physical storage of an updated system director or log on the storage medium each time the storage medium has any data recorded on it. This represents an improvement over prior techniques wherein intermediate text changes were stored only in random access memory in the text processing system and the log on the storage medium or tape was only periodically updated by transfer from the system random access memory upon the completion of some overall text updating operation.

This created the potential hazard that the log update data in the random access memory could be destroyed due to a power failure, for example, thereby losing a substantial amount of information.

Surely, the present approach which avoids this potential loss of data information is a tangible physical operation involving the unique transfer of log information from a random access memory storage to a permanent storage medium such as magnetic tape after each text change. There is no suggestion that a mathematical-type algorithm or computer program forms the crux of the invention, and it is respectfully submitted that any person of reasonable skill in the text storage and accessing art would readily appreciate the nature of the improvement disclosed. In addition, it is submitted, that all information is given to enable the skilled workman to put the invention into practical use. Certainly, this last submission has not been disproved by the Examiner, nor did the latter apparently deem his speculations on sufficiency to be of such cogency as to call for proof in the form of affidavits or the like....

...

It is particularly noted that the Patent Act authorizes the Commissioner to exercise and perform the powers and duties conferred and imposed upon that officer by or pursuant to this Act. Under Section 42, the Commissioner can refuse an application if he is satisfied that the application is not by law entitled to be granted a patent.

From another point of view the Supreme Court of Canada, in Vanity Fair v. Commissioner of Patents, (1939) S.C.R. 24, laid down the basic policy that:

> "The Commissioner of Patents ought not to refuse an application for a patent unless it is clearly without substantial foundation."

Considering that the method of the present invention not only affords superior handling of text in both security and speed of access, but also reduces physical wear on the accessing mechanisms, the Commissioner can hardly decide that the claims of this application have no substantial foundation....

...

The consideration before the Board is whether or not the claims are patentable under Section 2 of the Patent Act. Claim 1 reads as follows:

> A method of storing machine logging data indicative of the content of all segments and portions of said segments of a storage media for text storage in a text processing system, comprising:
>
> dedicating a plurality of defined portions of said segments for storage of said logging data on said dedicated portions;
>
> storing initial text data on said media and the logging data indicative of the then content of said media on only one of said dedicated portions; and
>
> storing, at the termination of each storage of updated text data on said media, the most current logging data on only one of said dedicated portions.

From the disclosure on page 11 at lines 24 to 28 we find the following statements:

> These flow diagrams will also enable anyone having skill in the art of computer programming to program a general purpose digital computer to access a segmented serial storage device and log the utilization of this device in accordance with the concepts of this invention.

Referring to this statement the Final Action concludes that:

- one practical embodiment of the disclosed flow diagrams could be implemented by anyone having skill in the art of computer programming.
- No new apparatus has been explicitly disclosed.
- the computer therefore is central to the embodiment of page 11 lines 24-28.
- In the embodiment of page 11 lines 24 to 28 the apparatus is a general purpose digital computer. The novelty of the embodiment lies in the program, not in the apparatus.

In his response to the Final Action, Applicant referred to various United States court cases, and also to the decision in Schlumberger Canada Ltd. v The Commissioner of Patents 56 CPR (2d) at 204 (1981). We believe it to be useful in determining the kind of subject matter disclosed by Applicant, to recall the following comments by Pratte, J. in Schlumberger, supra:

> In order to determine whether the application disclosed a patentable invention, it is first necessary to determine what, according to the application, has been discovered.

and

> I am of opinion that the fact that a computer is or should be used to implement discovery does not change the nature of that discovery

In making his arguments, Applicant emphasizes that his method calls for the physical placement of information in a specific manner and so achieves a physical improvement with respect to the security of data and the speed of access thereto as well as to the longevity of the machine. He says his application describes the physical storage of text data in such a manner that the log or index of the stored text is continually updated, thereby preventing any potential loss of this data which could occur in the case of a power failure for example. He relates how his arrangement reduces accessing time and minimizes the wear on the electromagnetic components as compared with those of current systems, by the physically tangible operation of recording current data on one dedicated portion physically closest to the storage reading and recording transducer when storing that data.

The Applicant argued against the Examiner's reading of page 11 lines 24 to 28 of the application. He maintains this portion of the disclosure is concerned with text processing equipment and says it merely points out that a person could take the inventive concept and derive a computer program to operate a general purpose computer. We accept the Applicant's argument on this point.

From the disclosure we learn that Applicant's discovery is concerned with a method of storing machine logging data for text storage in a text processing system. He describes the steps used to transfer log information to a permanent storage medium after each text change to provide for secure retention of data. He says that due to the placement of data, his method achieves speedier access thereto when updating a record. We are satisfied that the disclosed method is directed to more than the various calculations

to be made and to more than a mere scientific principle or abstract theorem. We are of the opinion that the disclosure of the application complies with the requirements of Section 2 of the Patent Act and so we do not support the rejection of the claims for being directed to non-statutory subject matter.

In summary, we recommend that the rejection in the Final Action be withdrawn.

A. McDonough
Chairman
Patent Appeal Board

M.G. Brown
Assistant Chairman

S.D. Kot
Member

I concur with the findings and the recommendation of the Patent Appeal Board. Accordingly, I withdraw the Final Action and I return the application to the Examiner for prosecution consistent with my decision.

J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Quebec

this 2nd. day of October, 1984

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