

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK D. ATKINS, AGNES Y. NGAI
and ALFRED T. RUNDLE

Appeal No. 96-1772
Application No. 08/180,648¹

ON BRIEF

Before THOMAS, KRASS and TORCZON, Administrative Patent Judges.

KRASS, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed January 13, 1994. According to appellants, this application is a continuation of Application 07/287,140 filed December 21, 1988, now abandoned.

Appeal No. 96-1772
Application No. 08/180,648

This is a decision on appeal from the final rejection of claims 8, 12, 15 and 16, all of the claims remaining in the application.

The invention pertains to a method and apparatus for counting remaining loop instructions and pipelining the next instruction.

Representative independent claim 8 is reproduced as follows:

8. Apparatus for performing a program loop having a number of iterations of a plurality of instructions comprising:

a. a means for initializing execution of said program loop;

b. means coupled to said initializing means for instantaneously maintaining a first count of said plurality of instructions within a current one of said number of iterations which are unexecuted within said current one of said number of iterations;

c. means coupled to said initializing means and said instantaneously maintaining means for counting said number of iterations;

d. means for predetermining a value for the first count, ranging from zero to the number of instructions in the plurality; and

e. means for comparing the first count to the value and for determining an address for an instruction to be executed when the first count equals the value.

Appeal No. 96-1772
Application No. 08/180,648

The examiner relies on the following references:

Fremont	4,703,481	Oct. 27, 1987
Mary et al. (Mary)	4,792,892	Dec. 20, 1988

Claims 8, 12, 15 and 16 stand rejected under 35 U.S.C. 103 as unpatentable over Mary in view of Fremont.

Reference is made to the brief and answer for the respective positions of appellants and the examiner.

OPINION

We affirm.

Reference to Mary, column 2, lines 32-65, and Figure 2, clearly shows a computer implemented method of executing a program loop of a number of iterations of a plurality of instructions wherein a program loop is initiated, the plurality of instructions are sequentially executed, a count is maintained as to which instructions have not been executed, and an indication is maintained as to which of the number of iterations is being executed. Further, a value, "N" is predetermined as to the number of iterations which are necessary in accordance with the program.

Appeal No. 96-1772
Application No. 08/180,648

Appellants do not argue these claimed limitations. Rather, they argue that the applied references do not suggest clause (e) of claim 8 or clause (f) of claim 12. These clauses are directed to comparing the count with the predetermined value and determining, when the count equals the value, an address for an instruction to be executed (claim 8) immediately following the last of the plurality of instructions (claim 12).

While the examiner relies on Fremont to supply such a teaching, it is our view that Fremont is merely cumulative to what is already clearly suggested by Mary.

Mary recites that a sequence of loop instructions "...has to be executed N times before continuing to the next instruction..." [column 2, lines 36-37]. Accordingly, it is inherent that, while a comparator is not specifically shown by Mary, a comparison must be made between the predetermined value N and the current count in order to determine that the loop of instructions has, in fact, been executed N times. Then, at the time that the comparison indicates that the loop of instructions has been executed N times, execution is continued to the next instruction. Inherently, then, the

Appeal No. 96-1772
Application No. 08/180,648

address of that next instruction, i.e. instruction JS (Figure 2) in Mary, must have been determined.

Appellants argue nothing of substance with regard to the instant claimed limitations other than "[n]either of the references allude [sic, alludes] in the slightest way to paragraph e. of independent claim 8 and to paragraph f. of independent claim 12" [brief-page 3]. Since we have shown, supra, how the references do, in fact, "allude" to these claim paragraphs, the rejection of claims 8 and 12 under 35 U.S.C. 103 is sustained.

Regarding dependent claims 15 and 16, appellants merely state that these claims limit claim 12 by reciting that the predetermined value ranges from zero to the number of instructions in the plurality and that the value is greater than zero. First, the mere recitation of claim limitations, without any indication as to how such limitations distinguish over the prior art, does not constitute a legitimate "argument." In any event, as to the value being greater than zero, this would have been inherent as it is meaningless to have zero or a negative number of iterations of loop instructions. As to the range, this is the same range recited

Appeal No. 96-1772
Application No. 08/180,648

in independent claim 8 which was not argued by appellants. Moreover, the range would have been obvious to skilled artisans, within the meaning of 35 U.S.C. 103, because it would appear meaningless to have a value less than zero or greater than the number of instructions in the plurality of instructions.

The examiner's decision rejecting claims 8, 12, 15 and 16 under 35 U.S.C. 103 is affirmed.

Appeal No. 96-1772
Application No. 08/180,648

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

JAMES D. THOMAS)
Administrative Patent Judge)
)
)
)

ERROL A. KRASS)
Administrative Patent Judge)
)
)
RICHARD TORCZON)
Administrative Patent Judge)

) BOARD OF PATENT
APPEALS AND
INTERFERENCES

Appeal No. 96-1772
Application No. 08/180,648

Hugh D. Jaeger
Hugh D. Jaeger, P.A.
1000 Superior Boulevard
Suite 302
Wayzata, MN 55391