Paper No. 34

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte SHINOBU KOIZUMI, ICHIRO KYUSHIMA,
TAN WATANABE,
TOSHIAKI KOHNO and SINGI DOMEN

Appeal No. 2003-1145
Application No. 09/080,241

HEARD: November 5, 2003

Before THOMAS, RUGGIERO, and LEVY, Administrative Patent Judges

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal from the final rejection of claim 30, which is the only claim remaining in the present application. Claims 1-29 have been canceled.

The disclosed invention relates to a translator for translating source programs into machine language programs in an electronic computer system. A compiler translates a source program into an abstract object program which is common to a

plurality of different types of computers. An installer converts the abstract object program into a machine language program at the target computer based on machine language instruction rules of the target computer.

Claim 30, the sole claim on appeal, is illustrative of the invention and reads as follows:

> 30. A method for succeeding a program prepared in a first computer by a second computer, said first computer having a first instruction set which is different from a second instruction set of said second computer, said method comprising the steps of:
>
> installing in said second computer an abstract object program compiled from a source program which is installed in said first computer;
>
> generating a machine language program of said second instruction set from said abstract object program to load on a memory of said second computer based on machine instruction generation rules, said machine language program when generated being directly executable in said second computer and having a binary format; and
>
> executing said machine language program by said second computer upon loading said machine language program to said memory of said second computer.

The Examiner's Answer cites the following prior art references:

Chan et al. (Chan)	5,280,613	Jan. 18, 1994 (filed Jun. 25, 1990)

Alfred V. Aho et al. (Aho), Compilers: Principles, Techniques and Tools, Chapter 1, pages 1-24, Addison-Wesley Publishing Company (March 1988).[1]

Claim 30 stands finally rejected under 35 U.S.C. § 102(e) as being anticipated by Chan.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Briefs[2] and Answer for the respective details.

OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the Examiner and the evidence of anticipation relied upon by the Examiner as support for the rejection. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellants' arguments set forth in the Briefs along with the Examiner's rationale in support of the rejection and arguments in rebuttal set forth in the Examiner's Answer.

It is our view, after consideration of the record before us,

[1] The Aho reference is mentioned in the Answer as a supporting document for the Examiner's position but is not part of the stated ground of rejection.

[2] The Appeal Brief was filed August 28, 2002 (Paper No. 26). In response to the Examiner's Answer dated November 5, 2002 (Paper No. 27), a Reply Brief was filed January 6, 2003 (Paper No. 28), which was acknowledged and entered by the Examiner as indicated in the communication dated March 21, 2003 (Paper No. 30).

that the Chan reference fully meets the invention as set forth in claim 30. Accordingly, we affirm.

We note that anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. RCA Corp. v. Applied Digital Data Systems, Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984); cert. dismissed, 468 U.S. 1228 (1984); W.L. Gore and Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 1554, 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

At pages 3 and 4 of the Answer, the Examiner indicates how the various limitations in appealed claim 30 are read on the disclosure of Chan. In particular, the Examiner points to Chan's illustrations in Figures 2 and 13 along with the respective accompanying descriptions beginning at column 2, line 33 and column 56, line 42 of Chan.

In our view, the Examiner's analysis is sufficiently reasonable that we find that the Examiner has as least satisfied the burden of presenting a prima facie case of anticipation. The burden is, therefore, upon Appellants to come forward with evidence and/or arguments which persuasively rebut the Examiner's

prima facie case. Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Brief have not been considered [see 37 CFR § 1.192(a)].

In response to the Examiner's anticipation rejection, Appellants have offered several arguments in support of their contention that Chan fails to teach or suggest numerous features of appealed claim 30. Initially, Appellants contend (Brief, page 6) that Chan's HPcode-Plus object file, which the Examiner has asserted corresponds to the claimed "abstract object program," is never executed by an actual physical machine nor translated into a machine program in binary format for execution by a second computer.

After careful review of the Chan reference in light of the arguments of record, however, we are in agreement with the Examiner's position as stated in the Answer. In our view, regardless of the correctness of Appellants' assertion that Chan's HPcode-Plus program is executed only by a virtual machine, there is no requirement in claim 30 that the abstract object program is executed by a physical machine. Further, as pointed out by the Examiner (Answer, page 5), there is a clear disclosure

in Chan (e.g., Figures 2 and 13) of the conversion of the HPcode-Plus object files 1150 and 1160 into executable code in the form of binary format machine language instructions 1356 at the installer site.[3]

We also find to be unpersuasive Appellants' related argument (Brief, page 7; Reply Brief, pages 2 and 3) that the object code representations 222, 232 in the second computer of Chan are not directly executable, but rather require further processing to generate a machine language program in binary format. In support of this contention, Appellants point to a passage at column 61, lines 9-13 of Chan which discusses the use of a native linker for producing an executable program.

We find ourselves, however, in agreement with the Examiner's assertion (Answer, page 8) that, contrary to Appellants' contention that the use of a native linker means that Chan's machine instructions are not directly executable, the passage at column 61, lines 9-13 of Chan can reasonably be interpreted as stating only that the executable machine instructions 222 and 232 in Chan are directly linked by the linker for execution. We

[3] See the definitions of "machine code," "machine instruction," and "machine language" at page 247 of Microsoft Press® Computer Dictionary (Second Edition), a copy of which is attached to this decision.

would further point out that this interpretation of the disclosure of Chan in relation to the language "machine language program . . . being directly executable" in appealed claim 30 is buttressed by our review of Appellants' disclosure in the specification. We note that it is a basic tenet of patent law that claims are to be given their broadest reasonable interpretation consistent with the description in the specification.

With the above discussion in mind, we have reviewed Appellants' specification for guidance as to the proper interpretation of the claim language and we find little enlightenment as to how to properly interpret the "directly executable" language of appealed claim 30. Further adding to this difficulty is the fact that Appellants' arguments in the Briefs do not refer to any specific portion of their specification or drawing figures in support of their arguments which attempt to distinguish the claim language from the applied prior art. Given the paucity of description in Appellants' specification as to the nature of the machine instructions generated at the installer location, we can only reach the conclusion that the "directly executable" language of appealed

claim 30 simply does not require the interpretation asserted by Appellants in the Briefs.

We also agree with the Examiner (Answer, page 4) that the alternative "interpreter" embodiment discussed at column 10, lines 37-43 of Chan provides additional support for the position that Chan's disclosure anticipates the features set forth in claim 30. In this alternative embodiment, Chan discloses that the compiler intermediate representation 212 is directly executed without first translating the intermediate representation into object code.

We have considered Appellants' arguments (Brief, page 8) directed to Chan's "interpreter" embodiment and find these arguments to be without merit. While we agree with Appellants' characterization of the operation of an interpreter as one that sequentially translates and executes source program statements one-by-one, it is equally true that this sequential statement by statement translation must involve a conversion into machine language code which enables execution by a computer. Since this machine code execution would indisputably include computer register involvement, we find that Chan's interpreter embodiment also provides for the generation of a directly executable machine language program loaded on the memory of a second computer as set

forth in appealed claim 30.

Lastly, we find to be unpersuasive Appellants' contention (Brief, page 6) that, since Chan's source program 202 is a machine independent program, there is no disclosure that the computer program 202 in Chan is a source program of a first instruction set installed in a first computer, the first instruction set being different from a second instruction set in a second computer. While Appellants are correct that Chan's program 202 is a machine independent program, it is also clear from the disclosure of Chan (column 9, lines 54) that this machine independent program is generated from a producer site 206 having a native computer platform, i.e., a first instruction set. Chan goes on to indicate that the target or second computers 216 and 226 have target computer platforms, i.e., second instruction sets, which may not be the same as platform (first instruction set) 206.

In view of the above discussion, since the Examiner's prima facie case of anticipation has not been overcome by any convincing arguments from Appellants, the Examiner's 35 U.S.C. § 102(e) rejection of the sole appealed claim 30, is sustained. Therefore, the decision of the Examiner rejecting claim 30 is affirmed.

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	)	
JOSEPH F. RUGGIERO Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
STUART S. LEVY Administrative Patent Judge	)	

JFR/vsh

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