

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

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Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte DONALD F. BALDUS,  
NANCY J. DUFFIELD, RUSSELL D. HOOVER,  
JOHN C. WILLIS, and FREDERICK J. ZIEGLER

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Appeal No. 97-0784  
Application 08/174,648<sup>1</sup>

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ON BRIEF

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Before BARRETT, HECKER, and FRAHM, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

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<sup>1</sup> Application for patent filed December 28, 1993, entitled (as amended in Paper No. 4) "Method And System For Maintaining Cache Coherence In A Multiprocessor-Multicache Environment Having Unordered Communication."

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DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 9, 10, and 13-25.

We reverse.

BACKGROUND

The invention is directed to a method of maintaining coherent shared memory in a computer system having unordered communication.

Representative claim 9 is reproduced below.

9. A method of maintaining coherent shared memory within a multiprocessor system including a plurality of memory devices sharing a shared memory interval, comprising the steps of:

    sending a first request packet from a requesting memory device directing a responding memory device having a copy of the shared memory interval to perform an action on the copy;

    returning the first request packet to the requesting memory device if the copy is in a transient state such that the copy is the subject of an outstanding transaction; and

    resending the request packet to the responding memory device, wherein the step of resending is performed only after ensuring that the conditions under which the original request was generated still dictate that the request should be performed.

The Examiner relies on the following prior art:

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Takahashi et al. (Takahashi)	4,930,122	May 29, 1990
Stamm et al. (Stamm)	5,404,483	April 4, 1995 (filed June 22, 1992)

Claims 9, 10, and 13-25 stand rejected under 35 U.S.C.  
§ 103 as being unpatentable over Stamm and Takahashi.<sup>2</sup>

We refer to the Final Rejection (Paper No. 7) and the Examiner's Answer (Paper No. 12) (pages referred to as "EA\_\_") for a statement of the Examiner's position and to the Appeal Brief (Paper No. 11) (pages referred to as "Br\_\_") for Appellants' arguments thereagainst.

OPINION

Disclosure

We do not find the limitation at issue about resending the request only after ensuring that the conditions requiring the operation are still valid in the body of the specification, but it is found in originally filed claims 12 and 26. Support for the claim limitation should be added to the body of the specification. See 37 CFR § 1.75(d)(1).

Obviousness

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<sup>2</sup> The statement of the rejection in the Final Rejection and the Examiner's Answer erroneously lists claims 9, 10, 13, and 15-25, leaving out claim 14.

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Appellants argue (Br5-6), and the Examiner admits (EA6), that neither Stamm nor Takahashi discloses that "the step of resending is performed only after ensuring that the conditions under which the original request was generated still dictate that the request should be performed," as recited in claim 9, or that "the second device resends the request packet only if the conditions requiring the operation are still valid," as recited in claim 9.

The Examiner reasons as follows (EA6):

Clearly, if the data at the memory location is no longer needed, it would make no sense, in fact it would waste valuable processing time, bus bandwidth and memory bandwidth for the processor to resend the request for data that is not needed by a process. If the data is needed by the processor, it would be necessary for the processor to resend the request packet for the stalled memory request. It would have been obvious, therefore, to resend the request packet to the responding memory device only if the data at the memory location is still required, since requiring the system to operate any other way would result in an extremely inefficient or possibly inoperative system.

Appellants argue (Br6): "Because the Examiner could not find any suggestion in the prior art, the rejection of the present invention on obviousness has been improperly based on hindsight."

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We conclude that the Examiner has not established a prima facie case of obviousness. It is true that there does not need to be an express teaching in the prior art to make a modification. See In re Oetiker, 977 F.2d 1443, 1447, 24 USPQ2d 1443, 1446 (Fed. Cir. 1992) (Nies, C.J., concurring) ("[T]he language that there must be some teaching, reason, suggestion, or motivation "in the prior art" or "in the prior art references" to make a combination to render an invention obvious . . . if taken literally would mean that an invention cannot be held to have been obvious unless something specific in a prior art reference would lead an inventor to combine the teachings therein with another piece of prior art. This restrictive understanding of the concept of obviousness is clearly wrong. . . ."); In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962) (those of ordinary skill in the art must be presumed to know something about the art apart from what the references expressly disclose).

Nevertheless, as our reviewing court has stated: "[T]he best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation

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to combine prior art references. . . . Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight." In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Evidence of a suggestion, teaching, or motivation to combine may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved. Id., 50 USPQ2d at 1617, citing Pro-Mold and Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996). "Even if obviousness of the variation is predicated on the level of skill in the art, prior art evidence is needed to show what that level of skill was." In re Kaplan, 789 F.2d 1574, 1580, 229 USPQ 678, 683 (Fed. Cir. 1986).

Here the Examiner admits that there is no teaching or suggestion of the checking-before-resending limitation in the references and the Examiner has offered no evidence of knowledge of persons of ordinary skill in the art that the

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limitation was a common solution to a similar problem. It is not sufficient to make up reasons for motivation, no matter how plausible these explanations may seem in hindsight, without some factual evidence to support those reasons. While it may be unnecessary to resend a packet if the operation is no longer required, the references do not check before resending; rechecking would take time and programming, which would complicate the system. The Examiner has made up reasons why the limitation would have been obvious using Appellants' own teachings, rather than providing evidence to show how one skilled in the art would have independently arrived at Appellants' invention. Thus, the Examiner has failed to establish a prima facie case of obviousness. The rejection of claims 9, 10, and 13-25 is reversed.

REVERSED

LEE E. BARRETT )  
Administrative Patent Judge )  
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 ) BOARD OF PATENT

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STUART N. HECKER	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
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ERIC FRAHM	)	
Administrative Patent Judge	)	

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