

The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BLAINE D. GAITHER
and ROBERT B. SMITH

Appeal No. 2004-0412
Application No. 09/052,358

ON BRIEF

Before THOMAS, BARRETT and OWENS, *Administrative Patent Judges*.
OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

This appeal is from the final rejection of claims 1, 3, 4, 7-10 and 12, and refusal to allow claims 5 and 11 as amended after final rejection. These are all of the claims pending in the application.

THE INVENTION

The appellants claim a method and system for analyzing the effectiveness of a computer cache. Claim 1, which claims the method, is illustrative:

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of the subsets of the addresses are different. Claim 4 requires monitoring addresses on an interconnect, sending a subset of the addresses to a model of a computer cache, and repeating the monitoring and sending multiple times, where at least two of the subsets of the addresses are different. Claim 8 requires an address filter receiving addresses from an interconnect and sending a subset of the addresses to a memory, and at least one different time sending at least one different subset of the addresses to the memory. Claim 10 requires an address filter receiving addresses from an interconnect and sending a subset of the addresses to a hardware model, and at least one different time sending at least one different subset of the addresses to the hardware model.

Colglazier discloses a method and system for determining performance characteristics of a cache design by simulating cache operations using an output trace of the cache (col. 1, lines 13-16; col. 2, lines 40-50; col. 4, line 62 - col. 5, line 3). The examiner acknowledges that Colglazier does not disclose the appellants' use of different address subsets (final rejection mailed November 8, 2002, paper no. 22, page 3). To remedy that deficiency in Colglazier the examiner relies upon Chen. See *id.*

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Chen discloses simulation techniques for cache performance analysis wherein simulations by space sampling and, alternatively, time sampling, are used to reduce the space and time requirements for simulating large caches (abstract). Chen discloses (page 55, first paragraph):

Since trace simulation is generally time-consuming, we may avoid the long simulation process by using *trace-sampling* techniques. The key idea is to observe only a small portion of the cache simulation and make the performance measurement from a collection of these observations (also called *samples*). As shown in Figure 1, the sampling techniques may be applied in either time domain or space domain, or combined both. By time sampling, the cache performance is observed only in several time-contiguous trace intervals and the rest portions of the trace stream are ignored. By space sampling, the performance is observed for references accessing portion of overall cache sets.

Chen's figure 1 has space domain on the vertical axis and time domain on the horizontal axis. The figure shows two spaced-apart regions of the space domain, each intersecting two spaced-apart regions of the time domain.

The examiner has reproduced Chen's figure 1 on page 5 of the examiner's answer, and has labeled as "Ref 1" the intersection of the first time domain region and the upper space domain region, and labeled as "Ref 2" the intersection of the second time domain region and the lower space domain region. The examiner argues

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that "Ref 1 represents the first subset of addresses are sampled at the first subset of time domains while Ref 2 represents the second subset of addresses are sampled at the second subset of time domains" (answer, page 5).

For a *prima facie* case of obviousness to be established, the teachings from the prior art itself must appear to have suggested the claimed subject matter to one of ordinary skill in the art. See *In re Rinehart*, 531 F.2d 1048, 1051, 189 USPQ 143, 147 (CCPA 1976). The examiner has not explained how Chen would have fairly suggested, to one of ordinary skill in the art, sampling, in the first time domain region, the upper but not the lower space domain region, and sampling, in the second time domain region, the lower but not the upper space domain region. Thus, the record indicates that the motivation relied upon by the examiner for sampling in that manner comes from the appellants' disclosure of their invention rather than coming from the applied prior art and, therefore, that the examiner used impermissible hindsight in rejecting the appellants' claims. See *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984); *In re Rothermel*, 276 F.2d 393, 396, 125 USPQ 328, 331 (CCPA 1960). Accordingly,

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we reverse the examiner's rejection.

DECISION

The rejection of claims 1, 3-5 and 7-12 under 35 U.S.C.
§ 103 over Colglazier in view of Chen is reversed.

REVERSED

JAMES D. THOMAS)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
LEE E. BARRETT)	APPEALS AND
Administrative Patent Judge)	INTERFERENCES
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