

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MICHAEL J. MEYER, DREW WINGARD, and
WOLF-DIETRICH WEBER

Appeal 2007-4294
Application 10/418,624¹
Technology Center 2100

Decided: May 29, 2008

Before: HOWARD B. BLANKENSHIP, JAY P. LUCAS, and
STEPHEN C. SIU, *Administrative Patent Judges.*

LUCAS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF CASE

Appellants appeal from a final rejection of claims 1 to 29 under authority of 35 U.S.C. § 134. The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b).

¹ Application filed April 18, 2003. The real party in interest is Sonics, Inc.

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Appellants' invention relates to circuitry in a computer to connect a resource (such as a network or a bus) to various processors that are requesting access to that resource. The round robin procedure distributes the resource fairly to the competing processes, but it takes a significant amount of overhead time to arbitrate. Appellants' design reduces that overhead connection time. In the words of the Appellants:

[A] method and apparatus for round robin arbitration is described. Arbitration for a shared resource is critical to the performance of many systems. Round robin arbitration is a good arbitration policy because of its simplicity and fairness. When the requestors are distributed, the time it takes to both receive the request and return the grant of the request can be as critical as the time it takes to do the arbitration.

A tree-based arbitration structure can efficiently traverse distances in a 2-D structure of an integrated circuit chip as seen in Figure 3A. For example, the integrated circuit may be a system on a chip (SOC).

(Spec., page 8, ¶¶ 23 and 24).

Claim 1 is exemplary:

1. An apparatus to provide round robin token arbitration comprising:
at least two token arbiters, wherein a first token arbiter connects to
two or more requestors and at least one other token arbiter.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Lee US 5,301,333 Apr. 5, 1994

Rejections:

R1: Claims 1 to 4, 6 to 9, 11 to 29 stand rejected under 35 U.S.C. § 102(a) for being anticipated by Admitted Prior Art (APA).

R2: Claim 5 stands rejected under 35 U.S.C. § 103(a) for being obvious over APA and the definition of Round Robin.

R3: Claim 10 stands rejected under 35 U.S.C. § 103(a) for being obvious over APA in view of Lee.

Appellants contend that the claimed subject matter is not anticipated by APA, or rendered obvious by APA alone, or in combination with Lee, for failure of the Admitted Prior Art to disclose an important limitation of the claims. The Examiner contends that each of the three groups of claims is properly rejected.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this opinion. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived.

See 37 C.F.R. § 41.37(c)(1)(vii) (2006).²

We affirm the rejections.

² Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group, except as will be noted in this opinion. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991).

ISSUE

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. §§ 102(a) and 103(a). The issue turns on whether the Admitted Prior Art of Figure 8 of the instant Specification discloses a first token arbiter connected to two or more requestors as claimed, and other related issues.

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. See *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

Our reviewing court states in *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989) that "claims must be interpreted as broadly as their terms reasonably allow." Our reviewing court further states that "the words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (internal citations omitted). The "ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application." *Id.* at 1313.

ANALYSIS

From our review of the administrative record, we find that the Examiner has presented a *prima facie* case for the rejections of Appellants' claims under 35 U.S.C. §§ 102 and 103. The *prima facie* case is presented on pages 3 to 7 of the Examiner's Answer.

In opposition, Appellants present a number of arguments. The first argument addresses the key issue of this appeal, namely the issue of whether the Examiner has erred in reading the claims on Figure 8 and the related Specification text. In that Figure, labeled "Prior Art," the Examiner contends that Appellants have indicated an arbiter, for example #810, connected to two or more requestors, for example Token Finite State Machine (FSM) #815 and Token FSM #825. Appellants contend that the Figure does not teach or suggest that the FSMs #815 and #825 are connected to a "first token arbiter" #810.

A glance at Figure 8 clearly indicates that Token FSM #815 is connected to Arbiter #810. FSM #825 is, by the same glance, indicated to be connected to Token Arbiter #820, which is connected through fast and slow request lines, and a single grant line, to the said Arbiter #810. Appellants argue that we should read the claim limitation "connects" as if it were to say "directly connected" (Reply Br., page 10, middle; page 12, bottom) and obviate the teaching of a connection through another element, namely Arbiter #820.

Our guidance from our overseeing courts indicates that during examination, while the claims can be improved and refined at the USPTO, we are to read the claims with reasonable breadth, in view of the Specification. (See *In re Zletz*, cited above). As we are talking about a tree

structure with various nodes, it is fair to call links between the various nodes “connections.” As we review the use of that term in the Specification, we note that the author of the Specification used the term “connections” in relation to the token traveling from the root node to the farthest downstream nodes and back (Spec., page 8, bottom). It is thus not an unfair stretch of the term for the Examiner to state that in Figure 8, nodes FSM #825 and FSM #815 are both connected to Arbiter #810. We do not find error with this reasoning.

Appellants further contend with respect to claim 1 that the arbitration mechanism of Figure 8 is not an implemented round robin token arbitration scheme, and thus cannot anticipate the claim. (App. Br., page 13, top). We have considered the Examiner’s response, and agree that the preamble language, without related structure in the body of the claim, cannot be relied upon as a distinguishing feature. We do not find error in the Examiner’s rejection.

Appellants’ arguments with respect to claim 5, R2, are embodied in the argument directed at claim 1, and have been answered above. We do not find error in that rejection.

Appellants argue, with respect to the rejection of claim 10, R3, that the arbiter is not connected to two or more requestors. (App. Br., page 15, middle). This argument has been discussed above with respect to claim 1. Appellants next argue that the reference Lee “does not disclose a finite state machine requestor with an additional preempted state that preempts the round robin arbitration.” (App. Br., page 16, middle). We have reviewed the Lee reference, and find that the promotion of the lower priority request,

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in the context of the APA, is a sufficient teaching to render the claimed preempted state obvious to one of ordinary skill in this art.

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that the Examiner did not err in rejecting claims 1 to 4, 6 to 9, and 11 to 29 under 35 U.S.C. § 102(a) as specified in R1. We also find that the Examiner did not err in rejecting claims 5 and 10 under 35 U.S.C. § 103(a) as expressed above (R2 and R3).

DECISION

The Examiner's rejections of claims 1 to 29 are affirmed.

AFFIRMED

tdl/ce

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