The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 16

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ISHWAR PARULKAR and KAMALESH RUPAREL

Appeal No. 1999-0134
Application 08/590,695

ON BRIEF

Before JERRY SMITH, BARRETT and LALL, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-29, which constitute all the claims in the application. An amendment after final rejection was filed on May 23, 1997 and was entered by the examiner.

The disclosed invention pertains to a method and apparatus for functionally testing an integrated circuit chip using test patterns derived from simulation tests performed on a system model which includes the integrated circuit chip.

Representative claim 1 is reproduced as follows:

1. A computer-implemented method for functionally testing an integrated circuit chip using test patterns derived from simulation tests performed on a system model which includes the integrated circuit chip, said method comprising:

(a) receiving a simulation model for an electronic system and a simulation test for the simulation model;

(b) identifying a portion of the simulation model to be individually tested;

(c) producing portion-specific simulation test data based on at least the portion identified in (b) and the simulation test; and

(d) deriving test patterns for testing the portion identified in (b) using the portion-specific simulation test data.

The examiner relies on the following references:

Aihara et al. (Aihara)	5,282,146	Jan. 25, 1994
Millman et al. (Millman)	5,390,193	Feb. 14, 1995
Mannle	5,390,194	Feb. 14, 1995
Fukui et al. (Fukui)	5,400,270	Mar. 21, 1995

The following rejections are separately set forth in the examiner's answer:

1. Claims 1-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Mannle.

2. Claim 5 stands rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Mannle and further in view of Millman.

3. Claims 8-13 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Mannle and further in view of Fukui.

4. Claim 14 stands rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Fukui and further in view of Millman.

5. Claim 15 stands rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Mannle.

6. Claims 16-29 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Mannle.

7. Claim 26 stands rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Mannle and further in view of Millman.

8. Claims 19 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over the teachings of Aihara in view of Mannle and further in view of Fukui.

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answer for the respective details thereof.

OPINION

We have carefully considered the subject matter on appeal, the rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of

ordinary skill

in the art the obviousness of the invention as set forth in claims 1-29. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS

Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984).

These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). 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)].

The details of the rejections made by the examiner are

set forth on pages 4-11 of the examiner's answer. Appellants have offered eight major arguments in the main brief which are set forth in sections II-IX respectively. Since we basically agree with each of appellants' arguments as set forth in the brief, we do not sustain the examiner's rejection of claims 1-29.

It is not apparent to us how the examiner's proposed combination of Aihara and Mannle results in the claimed invention. It appears that the examiner proposes to replace the simulator of Aihara with the combined simulator and testing of a circuit under test taught by Mannle. The problem with this combination, in our view, is that neither Aihara nor Mannle teaches producing portion-specific simulation test data based on the simulation model and deriving test patterns using the simulation test data. Aihara teaches the testing of a complete simulation system with no derivation of test patterns based on the simulation results. The test patterns in Aihara are developed in response to the functional design of the circuit. Mannle teaches that the generation of the test program can be built incrementally as the device under test

undergoes actual testing of the test program. The determination of test patterns in Mannle, however, is not based on portion-specific simulation test data, but instead, is based on actual results of the device under test. The simultaneous development and integration of test program sets in Mannle does not teach or suggest using results from a portion-specific simulation in determining the test patterns to be applied to that portion of the circuit to be tested.

We also agree with appellants that the examiner has essentially ignored specific recitations in the claims. Appellants' arguments set forth in sections IV-IX of the brief point to specific recitations in the claims which are neither taught nor suggested by the applied prior art. The examiner either does not address these recitations or simply implies that the recitations would inherently be present in the applied prior art. When specific claim limitations are argued by an applicant for patent, the examiner cannot simply dismiss those limitations as being obvious when the applied prior art does not provide an evidentiary record to support that finding of obviousness. In this case, we find that the prior art applied by the examiner does not support the examiner's

findings that each of the recitations argued in sections IV-IX of the brief is taught or suggested by the applied prior art.

In summary, since we are essentially in agreement with each of appellants' arguments set forth in the brief, we find that the examiner has failed to establish a prima facie case of obviousness. Therefore, the decision of the examiner rejecting claims 1-29 is reversed.

REVERSED

JERRY SMITH	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
LEE E. BARRETT	)	BOARD OF

PATENT

Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
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PARSHOTAM S. LALL	)	
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