

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LARRY LEEROY TRETTER
and JAMES ERNEST MALMBERG

Appeal No. 2004-2368
Application No. 09/395,854

ON BRIEF

Before DIXON, LEVY, and BLANKENSHIP, Administrative Patent Judges.
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-5, 7-11 and 13-15¹, which are all of the claims pending in this application.

¹ Subsequent to the final rejection (Paper No. 6, mailed August 8, 2003) appellant filed an amendment (Paper No. 7, filed September 10, 2003) canceling all of the pending claims except for claim 15, and requested entry of new claims 16-29. In a subsequent Advisory Action (Paper No. 8, mailed October 7, 2003), the examiner entered the cancellation of all of the pending claims with the exception of claim 15, but denied entry of proposed claims 16-29. Accordingly, only claim 15 remains before us for decision on appeal.

BACKGROUND

Appellants' invention relates to a bypass circuit for circuit testing and modification. An understanding of the invention can be derived from a reading of claim 15, which is reproduced as follows:

15. A method for testing an integrated circuit having a first stage and a second stage, the method comprising:

testing an integrated circuit, which has a first stage and a second stage, by serially propagating a signal through the first stage and then through the second stage; and

upon the testing detecting a defect in the integrated circuit, retesting the integrated circuit while bypassing the first stage, wherein a re-detection of the defect by the retesting of the integrated circuit indicates that the first stage is non-defective, and a detection of no defect in the integrated circuit by the retesting of the integrated circuit indicates that the first stage is defective.

The prior art reference of record relied upon by the examiner in rejecting the appealed claim is:

Lindberg et al. 5,663,967 Sep. 2, 1997
(Lindberg)

Claim 15 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Lindberg.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejection, we make reference to the examiner's answer (Paper No. 12, mailed March 26, 2004) for the examiner's complete reasoning in support

of the rejection, and to appellants' brief (Paper No. 11, filed January 23, 2004) for appellants' arguments thereagainst. 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.

OPINION

In reaching our decision in this appeal, 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 brief along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answer. Upon consideration of the record before us, we reverse.

We turn to claim 15, the sole claim before us for decision on appeal. To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently. In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997). As stated in In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)

(quoting Hansgirg v. Kemmer, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939)) (internal citations omitted):

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

Appellants assert (brief, pages 5-8) that "the prior art does not teach or suggest² bypassing a first stage in a two stage series before retesting a second stage." Appellant further asserts (brief, page 5) that Lindberg does not teach or suggest "retesting a two-stage circuit, which has a first stage and a second stage, after bypassing the first stage if an original test output from the second stage was defective." It is argued (id.) that because Lindberg tests for stuck at 0 or 1, such faults do not permit a signal to be propagated through either defective stage and that "Lindberg does not teach serially propagating a signal through the first stage and then the second stage, as claimed in the present invention ... [and] Lindberg does not teach 'upon the test detecting a defect in the integrated circuit, retesting the integrated circuit while bypassing the

² Appellants' use of the phrase "suggest" is misplaced as claim 15 has not been rejected under 35 U.S.C. § 103.

first stage.'" As an example, appellants assert (brief, page 6) that for this example, we assume that there are two latches, one being the first stage and the other being the second stage. In this example, if the output of the two latches is bad, and we retest the data coming out of the upstream latch and find it to be good, we can presume that the downstream latch is defective. If we find that the data from the upstream latch is bad, it confirms that the upstream latch is bad, but we cannot determine if the downstream latch is bad or not. In either case, the input data to both latches remains the same, and the upstream latch has not been bypassed by either the input data or the probe. As a second example, appellants use the sixteen latches disclosed in figure 5 of Lindberg. Appellants assert (brief, page 7) that if the output of the sixteen latches is bad, the probe is then placed in the center of the series, and moved left or right until the defective latch is located. However, appellants assert (id.) that the data input is still input into the left-most latch, which is never bypassed by the input data or the probe. Another example provided by appellants is where the last two latches are labeled 1 and 0 respectively. By moving the probe from the input of latch 1 to the output of latch 0, the latch tested has bypassed the first stage. However, doing so does not tell the

tester if latch 1 or latch 0 is bad, since they are both downstream of the probe. As a result, this example (method) does not teach "a re-detection of the defect by the retesting...indicates that the first stage is non-defective, and a detection of no defect...indicates that the first stage is defective.'"

The last example provided by appellants (brief, page 8) uses the same example of the two latches labeled 1 and 0. However, in this example, the probe is moved from the input of latch 1 to the output of latch 1. Once again, latch 1 is bypassed, but the initial testing would have to have shown good data from latch 1 in order to move the probe to the right. Thus, this example does not meet the claimed feature of first detecting a defect before retesting the integrated circuit. Since latch 1's data output was good, the result is that the claimed feature of "a detection of no defect indicates that the first stage is defective" is not met.

The examiner's position (answer, page 4 and 5) directs our attention to the scan-chain probing disclosed in figure 5 of Lindberg. In addition, the examiner creates an example (answer, page 5) using Lindberg's method. In the example, the examiner divides the sixteen latches into first and second circuit stages

of 8 latches. In the examiner's example, four probing events occur before the defect is located. The examiner acknowledges that in the example, the entire first stage of eight latches is not necessarily bypassed, but takes the position (answer, page 6) that "bypassing at least a portion 'bypasses' the stage." The examiner repeats this position (answer, page 7) that bypassing at least a portion of the first stage constitutes bypassing the first stage.

We begin our analysis with claim interpretation. Before addressing the examiner's rejections based upon prior art, it is an essential prerequisite that the claimed subject matter be fully understood. Analysis of whether a claim is patentable over the prior art begins with a determination of the scope of the claim. The properly interpreted claim must then be compared with the prior art. Claim interpretation must begin with the language of the claim itself. See *Smithkline Diagnostics, Inc. v. Helena Laboratories Corp.*, 859 F.2d 878, 882, 8 USPQ2d 1468, 1472 (Fed. Cir. 1988). Accordingly, we will direct our attention to appellants' claim 15 to derive an understanding of the scope and content of the claim.

What we are dealing with in this case is the construction of the limitations recited in the appealed claims. As stated by the

court in In re Hiniker Co., 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998) "[t]he name of the game is the claim." Claims will be given their broadest reasonable interpretation consistent with the specification, and limitations appearing in the specification are not to be read into the claims. In re Etter, 756 F.2d 852, 858, 225 USPQ 1, 5 (Fed. Cir. 1985).

We find that the claim sets forth that the integrated circuit being tested has a first stage and a second stage. The claim additionally recites that upon the testing detecting a defect, retesting the integrated circuit while bypassing the first stage. We find that the language of the claim does not recite that at least a portion of the first stage is bypassed. We find nothing in the claim that would indicate to an artisan that bypassing a portion of a first stage meets the claimed bypassing of the first stage. In order to meet the claimed "bypassing the first stage" it is necessary that the reference explicitly or inherently bypass the first stage in its entirety. Because the examiner considers bypassing at least a portion of the first stage to meet the claimed "bypassing the first stage" we find the examiner's interpretation of the claim to be faulty.

Turning to the disclosure of Lindberg, it would appear to us that figure 5 discloses 16 stages, one for each latch. However,

even if we considered the first eight latches to be one stage and the second eight latches to be a second stage, the claim is not anticipated by Lindberg for the following reasons. Upon testing disclosing a defect, Lindberg retests after latch 8. This does not bypass the first stage, but rather retests the first stage of latches 1-8. In addition, upon subsequently testing at latch 12 and getting a bad reading, does not indicate that the first stage is non-defective, as this was determined by the testing at latch 8, but rather determines that the defect is in the second stage. Thus, we find that the example provided by Lindberg does not anticipate claim 15. Turning to the example provided by the examiner (answer, page 7), we find that upon testing indicating a bad result in the testing at latch h, the examiner then tests the output of latch d. This does not bypass the first eight latches of the first stage as required by claim 15. In addition, retesting at latch b, also does not bypass all of the first stage, but rather only part of the first stage. Thus, we find that in both examples, Lindberg does not anticipate the language of claim 15. Because neither of the two examples relied upon meet the limitations of claim 15 due to the examiner's faulty interpretation of the claim language, we find that the examiner has failed to establish a prima facie case of anticipation of

claim 15. Accordingly, the rejection of claim 15 under 35 U.S.C. § 102(b) is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claim 15 under 35 U.S.C. § 102(b) is reversed.

REVERSED

JOSEPH L. DIXON)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
STUART S. LEVY)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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