

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. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte STEFAN GRAEF and EMERY SUGASAWARA

Appeal No. 2001-2447
Application No. 09/085,143

ON BRIEF

Before JERRY SMITH, BLANKENSHIP, and SAADAT, Administrative Patent Judges.
SAADAT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the Examiner's final rejection of claims 1-6. Claims 7-30 are indicated as allowable by the Examiner.

We reverse.

BACKGROUND

Appellants' invention relates to design of integrated circuits (IS) by using metal layer dependent attributes in a technology-independent description of an IC design. According to

Appellants, conventional models use a generic wire load model for estimating capacitance and resistance, which frequently lack sufficient accuracy (specification, pages 4 & 5). In the disclosed design of an IC, having several metal layers, a technology-independent description of a system is generated which specifies a signal and a selected metal layer for the signal (specification, page 6).

Representative independent claim 1 is reproduced below:

1. A method for designing an electronic circuit to be implemented on an integrated circuit die which includes plural metal layers, the method comprising:

a generating step of generating a technology-independent description of a system, the technology-independent description specifying a signal and a selected metal layer for the signal.

The Examiner relies on the following reference in rejecting the claims:

Rostoker et al (Rostoker) 5,623,418 Apr. 22, 1997

Claims 1-6 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Rostoker.¹

We make reference to the answer (Paper No. 13, mailed March 13, 2001) for the Examiner's reasoning, and to the appeal brief (Paper No. 12, filed December 18, 2000) and the reply brief (Paper No. 14, filed May 14, 2001) for Appellants' arguments thereagainst.

¹ In the answer, the 35 U.S.C. § 102(e) rejection of claims 1-30 as being anticipated by Luk et al. (U.S. Patent No. 5,883,814) or Rostoker et al. (U.S. Patent No. 5,808,330), the 35 U.S.C. § 102(b) rejection of claims 1-30 as being anticipated by Huang (U.S. Patent No. 5,568,395), the 35 U.S.C. § 102(b) rejection of claims 7-30 as being anticipated by Rostoker et al. (U.S. Patent No. 5,623,418), and the 35 U.S.C. § 103 rejection of claims 1-30 over De Camp et al. (U.S.) Patent No. 5,761,080) or Folta et al. (U.S. Patent No. 5,831,870) in view of taking of official notice, as stated in the final rejection (Paper No. 7, mailed March 13, 2000), have been withdrawn by the Examiner.

OPINION

Appellants argue that the Examiner has not shown that the applied prior art generates a technology-independent description of a system that specifies both a signal and a selected metal layer for the signal (brief, pages 9 & 10 and reply brief, page 2). Appellants further point out that the portions of the description of Figure 2 of Rostoker, as relied on by the examiner, are unrelated to metal layers for signal routing and the particular recited limitations of claim 1 (reply brief, page 3). Further referring to the embodiment depicted in Figure 9 of Rostoker, Appellants assert that the back-annotating of technology-dependent information into technology-independent steps of the design is not the same as generating a technology-independent system description that specifies both a signal and a selected metal layer for the signal (reply brief, page 4).

In response to Appellants' arguments, the Examiner quotes from different parts of Rostoker relating to technology independent features and creating a vehicle for providing structural information at the behavioral description level (answer, pages 3 & 4). The Examiner further relies on Rostoker's description of partitioning behaviorally-verified design in the form of back annotation and concludes that such fine tuning of the device description leads to the claimed method (answer, page 5).

A rejection for anticipation under section 102 requires that the four corners of a single prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without

Appeal No. 2001-2447
Application No. 09/085,143

undue experimentation. See Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999); In re Paulsen, 30 F.3d 1475, 1478-79, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994).

After reviewing Rostoker, we agree with Appellants' assertion that the claimed method of generating a technology-independent description of a system that specifies both a signal and a selected metal layer for the signal, is absent in the reference. Rostoker relates to interactive design and simulation of an electronic circuit (abstract) by implementing the steps of designing behavior, behavioral simulation, partitioning, logic synthesis and physical simulation that are required for the physical implementation of the design (col. 8, lines 6-46). As depicted in Figure 9, within the conceptual and structural levels of the design, the verification of the information is based on test vectors 906 and pre-defined information about blocks contained in libraries 914 (col. 23, lines 43-53).

Although the behaviorally-verified design is partitioned into architectural blocks which are physically implemented by incorporating critical information or back annotation, we find no support for the Examiner's conclusion that this results in generating a technology-independent description that specifies a signal and a selected metal layer for the signal. In our view, the Examiner's conclusion that the partitioning and physical implementation of Rostoker reads on the claimed generating a technology-independent description, is not supported by the prior art disclosure. In order for us to agree with the Examiner's position, we would need to improperly resort to speculation or unfounded assumptions to supply deficiencies in the factual basis of the

Appeal No. 2001-2447
Application No. 09/085,143

rejection. In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968), reh'g denied, 390 U.S. 1000 (1968). Accordingly, since Rostoker does not anticipate claim 1, nor claims 2-6 dependent thereupon, the 35 U.S.C. § 102 rejection of claims 1-6 cannot be sustained.

Appeal No. 2001-2447
Application No. 09/085,143

CONCLUSION

In view of the foregoing, the decision of the Examiner rejecting claims 1-6 under 35
U.S.C. § 102 is reversed.

REVERSED

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| JERRY SMITH |) | |
| Administrative Patent Judge |) | |
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| |) | BOARD OF PATENT |
| HOWARD B. BLANKENSHIP |) | APPEALS |
| Administrative Patent Judge |) | AND |
| |) | INTERFERENCES |
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Appeal No. 2001-2447
Application No. 09/085,143

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