

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. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte TING-WAH WONG and CHONG L. WOO

Appeal No. 2004-0634
Application 09/948,271

ON BRIEF

Before KIMLIN, WARREN, and WALTZ, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 9 through 15, which are all of the claims pending in this application.

Claim 9 is illustrative of the claims on appeal:

9. An integrated circuit comprising:

- a substrate;
- a cascode circuit formed over said substrate; and
- a triple well formed in said substrate under said cascode circuit.

The appealed claims, as represented by the above claim, are directed to an integrated circuit having a cascode circuit and a triple well formed in the substrate under the cascode circuit.

The references relied on by the examiner are:

Momohara	6,055,655	April 25, 2000
Williamson	6,369,427	April 9, 2002

Claims 9 through 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the combined teachings of Williamson and Momohara. Appellants state in the appeal brief that claims 10-15 "may be grouped with claim 9 for convenience on appeal." (brief, page 3.) Accordingly, we decide this appeal based entirely on appealed claim 9. *See* 37 CFR § 1.192(c)(7)(2002).

Rather than reiterate the respective position advanced by the examiner and the appellants, we refer to the examiner's answer and appellants' brief for a complete exposition thereof.

The first step in reviewing the application of the prior art to the appealed claims is to interpret the language of the claim by giving the claim terms their broadest reasonable interpretation consistent with the written description provided in appellants' specification as it would be interpreted by one of ordinary skill in the art. *See, e.g., In re Hyatt*, 211 F.3d 1367, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000); *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Zletz*, 893 F.2d 319, 321-22, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). We here consider the claim term "triple well," which is used in the specification to

refer to a P-well **320**, an N-well **318**, and a P-type substrate **316** (specification, page 26 and Fig. 22). The claim term “triple well” thus includes at least structures wherein the doped substrate itself makes up one of the three wells.

The examiner finds that Williams teaches I/O circuits **32** comprising a cascode circuit **54** (answer, page 3). The examiner further finds that Momohara teaches I/O circuits **53'-4** formed over a triple well structure including a P-well **27C-4** and N-well **22-4** formed in the substrate (answer, page 4). Appellants do not dispute the examiner's finding that Momohara teaches an input circuit formed over a triple well within a semiconductor substrate. Nor do appellants dispute the examiner's finding that Williams teaches a cascode circuit that is part of an input/output circuit. We find that all of the claim limitations are met by Momohara and Williams as combined in the manner asserted by the examiner. Thus, the dispositive issue in this case is whether a person having ordinary skill in the art would have been motivated to combine Momohara and Williams to produce a device having a cascode circuit formed over a triple well within a substrate.

In order to establish that the claimed invention would have been obvious to a person of ordinary skill in the art at the time of the invention within the meaning of 35 U.S.C. § 103(a), the examiner must show some objective teaching, suggestion or motivation in the applied prior art or knowledge generally available to one of ordinary skill in the art that would have led the person of ordinary skill to combine the teachings. *In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783 (Fed. Cir. 1992); *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d at 1266, 23 USPQ2d at 1783-84. However, "[a]s long as some motivation or suggestion to combine the references is provided by the prior art taken as a whole, the law does

not require that the references be combined for the reasons contemplated by the inventor." *In re Beattie*, 974 F.2d 1309, 1312, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992); *In re Kemps*, 97 F.3d 1427, 1430, 40 USPQ2d 1309, 1311 (Fed. Cir. 1996); *In re Dillon*, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990)(in banc).

The examiner finds that one of ordinary skill in the art would have been motivated to combine Momohara with Williams based on the known advantages of each individual component in the context of I/O circuits. The examiner cites both Momohara's teaching that a triple well structure can reduce the influence of electric noise among circuits (Momohara, col. 41, ll. 18-23) and that a triple well structure permits applying optimal bias potentials to the divided wells (Momohara, col. 41, ll. 38-44). We agree with the examiner that one of ordinary skill would have perceived an advantage in placing the input/output circuit of Williams within a triple well structure such as that taught by Momohara. The examiner cites Williams' teaching that the I/O circuit, which includes cascode circuitry, has improved performance characteristics (Williams, col. 5, ll. 48-49) and that cascode circuitry operates to electrically insulate the pad from other circuitry during the presence of stress currents at the pad (Williams, col. 6, ll. 24-27). Again, we agree with the examiner that one of ordinary skill in the art would have perceived an advantage from including cascode circuitry in the input/output circuitry of Momohara. Accordingly, we find that the examiner has identified ample motivation within the prior art that would have suggested combining the teachings of Momohara and Williams.

Appellants argue that "[t]here is no indication that anyone has appreciated that using the cascode circuit with the triple well would reduce the output shunt capacitance to achieve higher output bandwidth." (brief, page 3.) Under appellants' argument, the examiner would essentially be required to find a motivation to combine the references that is the same as that which appears in appellant's specification. Appellants cite no authority for this. In contrast, however, it is well established that "[t]he motivation in the prior art to combine the references does not have to be identical to that of the applicant to establish obviousness." *In re Kemps*, 97 F.3d 1427, 1430,

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40 USPQ2d 1309, 1311 (Fed. Cir. 1996) (citing *In re Dillon*, 919 F.2d 688, 693, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990)(in banc)). Accordingly, based on the record before us, we find that the examiner has established a *prima facie* case of obviousness.

The decision of the examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

Edward C. Kimlin)	
Administrative Patent Judge)	
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Administrative Patent Judge)	INTERFERENCES
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