

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 TOM D. FLETCHER, SAM E. CALVIN and TIM FRODSHAM

Appeal No. 1998-2116
Application 08/665,760

ON BRIEF

Before KRASS, FLEMING, and LALL, **Administrative Patent Judges**.
FLEMING, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claim 48, the only claim pending in the application.

The invention relates to an input/output (I/O) transceiver circuit having a pulsed latch receiver circuit,

specifically a method for reducing the power consumption of the receiver circuit. In response to a rising edge of a bus clock signal (Brief, page 10, line 4), a first pulse is generated using logic circuitry (Brief, page 10, lines 5-18). The beginning of that pulse turns on a differential amplifier (page 10, lines 5-7), which is used to compare an I/O line voltage with a reference voltage. The differential amplifier turns off (Brief, page 10, lines 11-14) in response to the end of the first pulse.

Claim 48 is reproduced as follows:

48. A method for reducing the power consumption of a pulsed latch receiver circuit, the method comprising the steps of:

generating a first pulse using logic circuitry in response to a rising edge of a bus clock signal;

turning on a differential amplifier in response to the beginning of the first pulse;

comparing an I/O line voltage to a reference voltage to generate an output signal from the differential amplifier; and

turning off the differential amplifier in response to an end of the first pulse.

The Examiner relies on the following references:

Grundmann et al. (Grundmann) 5,107,462 Apr.

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21, 1992

Laug et al. (Laug)
1994

5,347,175

Sept. 13,

(filed May 12,

1992)

Claim 48 stands rejected under 35 U.S.C. § 103 as being unpatentable over Laug and Grundmann.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the brief and the answer for the details thereof.

OPINION

We will not sustain the rejection of claim 48 under 35 U.S.C. § 103.

The Examiner has failed to set forth a **prima facie** case. It is the burden of the Examiner to establish why one having ordinary skill in the art would have been led to the claimed invention by the express teachings or suggestions found in the prior art, or by implications contained in such teachings or suggestions. **In re Sernaker**, 702 F.2d 989, 995, 217 USPQ 1, 6 (Fed. Cir. 1983). "Additionally, when

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determining obviousness, the claimed invention should be considered as a whole; there is no legally recognizable 'heart' of the invention." ***Para-Ordnance Mfg. v. SGS Importers Int'l, Inc.***, 73 F.3d 1085, 1087, 37 USPQ2d 1237, 1239 (Fed. Cir. 1995), ***cert. denied***, 117 S.Ct. 80 (1996) ***citing W. L. Gore & Assocs., Inc. v. Garlock, Inc.***, 721 F.2d 1540, 1548, 220 USPQ 303, 309 (Fed. Cir. 1983), ***cert. denied***, 469 U.S. 851 (1984).

On pages 4-8 of the Brief, Appellants argue that Laug does not teach the generation of a pulse signal in response to a rising edge of a clock input. Because Laug lacks a teaching of the first pulse, Appellants argue, Laug fails to teach turning on a differential amplifier in response to the beginning of the pulse, and turning off the differential amplifier in response to the end of the pulse.

In the answer, the Examiner admits that Laug does not teach generating a pulse using logic circuitry in response to a rising edge of a bus clock signal, but asserts that such pulse generation is well known in the art, citing Grundmann as evidence. The Examiner further asserts that Grundmann teaches

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turning a differential amplifier on and off in response to the beginning and end, respectively, of a pulse. Because every element of the claimed invention is taught in Laug and/or Grundmann, the Examiner concludes that the invention would have been obvious in view of the two references.

As pointed out by our reviewing court, we must first determine the scope of the claim. "[T]he name of the game is the claim." *In re Hiniker Co.*, 150 F.3d 1362, 1369, 47 USPQ2d 1523, 1529 (Fed. Cir. 1998).

Appellants' claim 48 recites a method for reducing power consumption in a pulsed latch receiver, comprising generating a first pulse using logic circuitry in response to a rising edge of a bus clock signal, turning on a differential amplifier in response to the beginning of the first pulse, comparing an I/O line voltage to a reference voltage to generate an output signal from the differential amplifier, and turning off the differential amplifier in response to the end of the first pulse.

We agree with the Examiner that Laug teaches a differential amplifier (column 5, lines 39-45) that compares

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an input voltage to a reference voltage to generate an output signal. We agree that Laug does not teach using logic circuitry to generate a first pulse in response to a rising edge of a bus clock signal, but that Grundmann supplies evidence that such pulse generation is well known in the art. Neither reference, however, teaches using the generated pulse to turn on and/or off a differential amplifier; Grundmann teaches the use of the pulse signal to assert a signal to an AND gate (see column 12, line 43 to column 13, line 3). Because the combination advanced by the Examiner does not contain every element of the claimed invention, we cannot sustain the rejection of claim 48 under 35 U.S.C. § 103.

The Federal Circuit states that "[t]he 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 1260, 1266 n.14, 23 USPQ2d 1780, 1783-84 n.14 (Fed. Cir. 1992), ***citing In re Gordon***, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984). "Obviousness may not be established using hindsight or in view of the

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teachings or suggestions of the inventor." *Para-Ordnance*, 73 F.3d at 1087, 37 USPQ2d at 1239, *citing W. L. Gore & Assocs.*, 721 F.2d at 1551, 1553, 220 USPQ at 311, 312-13.

Upon a careful review of Laug and Grundmann, we fail to find any suggestion or reason to modify the combination of Laug and Grundmann to turn a differential amplifier on or off in response to a logic circuit-generated pulse. Neither reference suggests that a pulse generated in response to the rising (or falling) edge of a clock signal, such as signal "X" in Grundmann, may be advantageously employed to turn a differential amplifier on or off. The Examiner's citation of column 12, lines 58-65 of Grundmann does not "clearly teach" this feature; the cited section of Grundmann merely discusses that transistors 138, 128, and 130 form AND gate 102, and that the output of NOR gate 94 (signal "X") controls transistor 138 to be biased "off" or "on." No recitation of differential amplifier function or on/off

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control is made. Therefore, we will not sustain the rejection of claim 48 under 35 U.S.C. § 103 as being unpatentable over Laug and Grundmann.

In view of the foregoing, the decision of the Examiner rejecting claim 48 under 35 U.S.C. § 103 is reversed.

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

REVERSED

ERROL A. KRASS)
Administrative Patent Judge)
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) BOARD OF PATENT
MICHAEL R. FLEMING)
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