

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ROBERT M. THELEN, ROBERT ELSHEIMER, and BRIAN J.
MESEK

Appeal 2007-4539
Application 10/915,795
Technology Center 2800

Decided: March 26, 2008

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and JOHN A. JEFFERY, *Administrative Patent Judges*.

SAADAT, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1-20, which are all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

Appellants invented a driver circuit that generates an output drive signal that is independent of the operating mode of the output transistor in the saturation and the triode regions (Spec. 4). An understanding of the invention can be derived from a reading of independent claims 1 and 11 and dependent claim 3, which are reproduced as follows:

1. A driver circuit that generates an output drive signal comprising:
 - an output transistor that operates in one of a saturation region and a triode region and that generates an output drive signal; and
 - a mechanism coupled to the output transistor that receives the output drive signal and a bias signal and selectively adjusts the output drive signal based on the bias signal.
3. The driver circuit of claim 1 further comprising:
 - a bias signal generator that generates a bias signal at a first node in the driver.
11. A driver circuit that generates an output signal comprising:
 - an output transistor that operates in one of a saturation region and a triode region;
 - and wherein the driver circuit employs feedback to generate the output drive signal that is independent of the operating mode of the transistor.

The Examiner relies on the following prior art reference:

Rudolph US 6,690,229 B2 Feb. 10, 2004

Claims 1-20, all of the appealed claims, stand rejected under 35 U.S.C. § 102(e) as being anticipated by Rudolph.

Rather than repeat the arguments here, we make reference to the Briefs and the Answer for the respective positions of Appellants and the Examiner.

We affirm-in-part.

ISSUE

Under 35 U.S.C § 102(e), does Rudolph have a disclosure which anticipates the invention set forth in claims 1-20?

PRINCIPLES OF LAW

“A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference.” *See In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994). “Anticipation of a patent claim requires a finding that the claim at issue ‘reads on’ a prior art reference.” *Atlas Powder Co. v. IRECO Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999) (citing *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 781 (Fed. Cir. 1985)).

ANALYSIS

1. *Claim 1*

Appellants argue that Rudolph relates to a feedback current-source circuit wherein “an input current I_{in} is provided to the current source, an output current I_{out} is generated, where the value of I_{out} depends on I_{in} ” (App. Br. 9). Referring to the disclosure of Rudolph in column 3, lines 2-7, Appellants contend that Rudolph does not teach “a mechanism coupled to the output transistor that receives the output drive signal and a bias signal

and selectively adjusts the output drive signal based on the bias signal,” as claimed in claim 1 (*id.*).

The Examiner asserts that the Figure of Rudolph shows an output transistor 4 wherein the rest of the components shown in the Figure make up a mechanism that receives the output drive signal, at the source of transistor 12, and a bias signal, I_{in} , to selectively adjust the output drive signal based on the bias signal or I_{in} (Ans. 5). The Examiner further argues that the “mechanism” adjusts the gate voltage of transistor 4 to vary the output current I_{out} and maintain a constant ratio between the output and the input currents (*id.*).

We agree with the Examiner that the input current I_{in} and the output current I_{out} are ultimately related as the input current controls the transistor 4 which, in turn, controls the output current. In other words, as stated by Appellants (App. Br. 9), “the value of I_{out} depends on I_{in} .” We also disagree with Appellants (App. Br. 9; Reply Br. 3) that the input current I_{in} in Rudolph cannot be equated with the claimed “bias signal.” Although Rudolph identifies the signal 14, which is supplied to the base of transistor 3, as “a bias” (col. 3, ll. 8-9), it is the reference current I_{in} that is the bias signal which the output current is based on.

We also find the Examiner’s reasoning (Ans. 5-6) that the claim limitation of “selectively adjusts the output drive signal based on the bias signal” reads on the control of the output current I_{out} in Rudolph to be reasonable. In that regard, the signal provided by the source and the drain of transistor 3 determines the gate voltages at the gates of transistors 2 and 4, which ultimately determines or adjust the value of the output current I_{out} . We note that claim 1 does not specify the manner in which the mechanism,

based on the bias signal, adjusts the output current, and therefore, can read on any manner of adjustment, such as the one disclosed by Rudolph. As such, even if transistors 10-12 prevent gate-oxide breakdown of transistor 4 (Reply Br. 2), such function affects and can adjust the output current I_{out} . Therefore, the 35 U.S.C § 102(e) rejection of claim 1 is sustained.

2. *Claim 2*

Regarding the claim limitation of generating a replica signal based on the output drive signal by a first feedback loop and employing the replica signal and the bias signal in a second feedback loop to adjust the output signal, Appellants argue that the transistors 10-12 only prevent gate oxide breakdown of the output transistor and do not function as either of the claimed first or second feedback loops (App. Br. 11). We find the Examiner's response (Ans. 7) to be based more on speculation than any facts present in the record. Specifically, we do not agree with the Examiner that the current through transistors 10-12 is a replica of the output current that is employed in a second feedback loop with the bias signal to adjust the output drive signal, as recited in claim 2. Therefore, we do not sustain the 35 U.S.C § 102(e) rejection of claim 2.

3. *Claim 3*

The Examiner has characterized the claimed bias signal generator as the node between the transistors 2 and 4 (Ans. 3). Appellants argue that no bias signal generator is disclosed in Rudolph that supplies current to this node (App. Br. 12). We find that while transistor 1 is effective in drawing the input current I_{in} , an input signal must be necessarily generated and supplied to node 5. Therefore, a signal generator is inherently present in the output drive circuit of Rudolph that generates a bias signal in the form of the

I_in at a first node 5 in the driver. Therefore, the 35 U.S.C § 102(e) rejection of claim 3 is sustained.

4. *Claim 11*

With respect to claim 11, Appellants argue that Rudolph is silent as to how transistor 4 operates in different modes or whether there are even multiple modes of operations (App. Br. 10). The Examiner mainly points to transistors 10-12 in Rudolph and apparently equates protecting against gate oxide break down to generating the output signal independent of the operation mode of the output transistor (Ans. 7). However, a review of the disclosure of Rudolph produces no additional detail beyond what Appellants have pointed out about the operation mode of the output transistor. Therefore, we agree with Appellants that Rudolph is not concerned with the operation mode of the output transistor or using feedback loops to generate the output current that is independent of the operation mode. Therefore, we do not sustain the 35 U.S.C § 102(e) rejection of claim 11.

CONCLUSION

Because we found no error in the Examiner's position, we sustain the 35 U.S.C. § 102(e) rejection with respect to claims 1 and 3. We also sustain the rejection of claims 4-10, dependent thereon, since Appellants have not presented any substantive arguments directed separately to the patentability of these claims. Absent any separate arguments with respect to those claims, they fall with the representative claims 1 and 3 discussed above. *See In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991).

However, since Appellants have persuaded us of the Examiner's error in rejecting claims 2 and 11 as anticipated by Rudolph, we do not sustain the

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35 U.S.C. § 102(e) rejection of claim 2, as well as 20 which includes similar limitation related to a replica signal, and of claim 11, as well as claims 12-19 dependent thereon.

DECISION

The decision of the Examiner rejecting claims 1 and 3-10 is affirmed, but reversed with respect to rejecting claims 2 and 11-20.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. 1.136(a)(1)(iv).

AFFIRMED-IN-PART

gvw

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