

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FRANK KOWALEWSKI and SIEGFRIED BAER

Appeal 2009-0064
Application 10/276,834
Technology Center 2600

Decided: December 12, 2008

Before ROBERT E. NAPPI, JOHN A. JEFFERY, and KARL D.
EASTHOM, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 from the Examiner's rejection of claims 1-4. We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

STATEMENT OF THE CASE

Appellants invented a method and transmission station for regulating transmission power. The method and station adjust power as a function of a power ratio between the current transmission power and the average transmission power over time to adapt more quickly and precisely to the properties of the transmission channel.¹ Independent claim 1 is reproduced below:

1. A method for regulating the transmission power (P) of a transmitting station (10) in a transmission system as a function of an estimate of the signal/interference ratio (SIR) in a receiving station (20), in which on the basis of an instruction (TPC) of the receiving station (20) the transmission power (P) in the transmitting station (10) is changed, characterized in that the amount of the change (DeltaP) in the transmission power (P) is adjusted as a function of a power ratio (P/Pmean) between the current transmission power (P) and an average over time (Pmean) in the transmission power (P), such that when the value of the power ratio (P/Pmean) is increasing, the amount of the change (DeltaP) in the transmission power (P) is also raised.

The Examiner relies upon the following as evidence in support of the rejection:

Schlueter	US 6,166,598	Dec. 26, 2000
Dohi	US 6,341,224 B1	Jan. 22, 2002 (effectively filed Jun. 26, 1997)

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Dohi and Schlueter (Ans. 3-5).

¹ See generally Spec. 1:19-30, 9:18-26, and 10:1-10.

Rather than repeat the arguments of Appellants or the Examiner, we refer to the Brief and the Answer² for their respective details. In this decision, we have considered only those arguments actually made by Appellants. Arguments which Appellants could have made but did not make in the Brief have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

The Examiner finds that the combination of Dohi and Schlueter teaches all the limitations of representative independent claim 1,³ including the amount of the transmission power change is a function of a power ratio between the current transmission power and an average over time in the transmission power (Ans. 3-4). Appellants argue the Examiner confuses the Schlueter teaching concerning the adjustment in voltage with an adjustment in the transmission power (Br. 5-6). Additionally, Appellants argue Schlueter teaches when the peak-to-average ratio is above a threshold the supplied voltage is lowered and not increased (Br. 7).

ISSUES

The following issues have been raised in the present appeal:

- (1) Have Appellants shown the Examiner confused Schlueter's voltage and power adjustment teachings and thereby erred in rejecting claim 1 under § 103?

² Throughout the opinion, we refer to (1) the Appeal Brief filed May 7, 2007 and (2) the Examiner's Answer mailed August 23, 2007.

³ Appellants do not separately argue independent claims 1 and 3 and do not particularly argue claims 2 and 4 (Br. 5-8). Accordingly, we select independent claim 1 as representative. 37 C.F.R. § 41.37(c)(1)(vii).

(2) Have Appellants shown the Examiner erred in finding Schlueter teaches the amount of the change in the transmission power rises when a power ratio between the current transmission power and an average over time in transmission power increases in rejecting claim 1 under § 103?

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Schlueter teaches adjusting transmission power for adjacent and alternative channels of a transmitting station as a function of a peak-to-average power ratio (Schlueter, col. 1, ll. 7-13 and col. 6, ll. 31-39; Fig. 1).

2. The Examiner finds that peak-to-average power ratio in Schlueter is the power ratio between the current transmission power and an average over time in the transmission power (Ans. 6). Appellants have not disputed this finding.

3. Schlueter teaches these power adjustments are made in order to provide an efficient and predictable way of controlling adjacent and alternate channel power (Schlueter, col. 6, ll. 37-39).

4. Schlueter teaches the power (left vertical axis) increases (e.g., curves 92, 98, and 130) when the power ratio increases (right vertical axis) (Schlueter, col. 4, ll. 65-67, col. 5, ll. 2-4 and 43-46, and col. 6, l. 1-8; Figs. 3 and 4).

5. Schlueter discloses that when the power ratio increases the amount of change in the transmission power is raised along portions (e.g., between -3 and 3 dBm of the input power) of curve 130 (Schlueter, Fig. 3).

6. Schlueter discusses an amplification loop that changes the voltage using the peak-to-average ratio as a threshold at 260, 262, 264, and 266 (Schlueter, col. 9, l. 58 and col. 10, ll. 7-12; Fig. 7).

7. Schlueter discusses adjusting the average output power at 268 and 270 after the voltage has been adjusted (Schlueter, col. 10, ll. 13-19; Fig. 7).

8. The Specification of the present application shows the rising amount of the transmission power change when the power ratio increases is absolute value of the amount of change (Spec. 8:13-25; Fig. 4).

PRINCIPLES OF LAW

Discussing the question of obviousness of a patent that claims a combination of known elements, *KSR Int'l v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), explains:

If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [v. *AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock[, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740.

“[T]he Examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability.” *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

If the Examiner’s burden is met, the burden then shifts to the

Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments.

Id.

During examination of a patent application, a claim is given its broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. Of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

ANALYSIS

Schlueter teaches adjusting transmission power for adjacent and alternative channels of a transmitting station as a function of a peak-to-average power ratio (FF 1). As the Examiner states (Ans. 5), this discussion in Schlueter relates to adjusting power and not adjusting voltage. The Examiner finds this peak-to-average power ratio is the power ratio between the current transmission power and an average over time in the transmission power—a finding that is undisputed (FF 2). Moreover, Figures 3 and 4 of Schlueter correlate changes in power (right vertical axis) to the peak-to-average power ratio (left vertical axis) (FF 4). As such, contrary to Appellants’ assertions (Br. 5-6), Schlueter teaches changes in the transmission power are a function of the power ratio, and the Examiner has not ignored this claimed feature or confused it with the voltage adjustment discussion (FF 6) of Schlueter.

Appellants also contend that Schlueter teaches the supply voltage is lowered when the power ratio is increasing (Br. 7). This argument is not commensurate in scope with the claim recitation: “the amount of the change

(DeltaP) in the transmission power (P) is also raised.” First, the claim does not recite that the transmission power rises when the power ratio increases, but rather recites that the *amount of the change* in the transmission power rises when the power ratio increases. Second, the Specification expresses the amount of the change of the transmission power as an absolute value (FF 8). Thus, even when the amount of the change is negative, the Specification supports a determination that the amount of the transmission power change has risen as long as the absolute value of the change is greater from one measured instant to the next measured instant. In light of the Specification and the claim breadth, “the amount of the change (DeltaP) in the transmission power (P) is also raised” means the amount of the change in the transmission power measured from one instant to the next is greater in an absolute value sense.

Schlueter teaches adjusting adjacent and alternate channel power based on a power ratio between the current transmission power and an average over time in the transmission power (FF 1 and 2). As Appellants contend, Schlueter teaches when the power ratio is above a threshold at 260, the voltage is lowered at 262, and when the power ratio is below a threshold at 264, the voltage is raised at 266 (FF 6). However, this discussion addresses a threshold level for the power ratio and whether the power ratio is increasing or decreasing. This portion of Schlueter also fails to discuss the amount of the change in the power but rather addresses the voltage is raised or lowered relative to the threshold. Steps 268 and 270 in Schlueter address adjusting the average power output (FF 6) and not the amount of the change in the power. These portions of Schlueter are, therefore, incomplete in

addressing the claim limitation related to changing the transmission power as recited in claim 1.

As stated previously, however, Figures 3 and 4 of Schlueter show a correlation between the power (left vertical axis) and the power ratio (right vertical axis) (FF 4). Portions along curve 130 (e.g., between -3 and 3 dBm of the input power) also show when the power ratio increases the amount of change in the transmission power is raised (FF 5). Thus, Schlueter teaches the claim limitation of “the amount of the change (ΔP) in the transmission power (P) is adjusted as a function of a power ratio . . . such that when the value of the power ratio (P/P_{mean}) is increasing, the amount of the change (ΔP) in the transmission power (P) is also raised.”

Also, the power ratio in Figure 7 may be less than the threshold at 264 but still be increasing in value. For example, suppose the threshold is set to a value of three, while the power ratio has increased from a value of one to two. In this situation, Schlueter would suggest increasing the power at steps 268 and 270 (FF 7). Continuing with this example, in the amplification loop of Figure 7 (FF 6), while there may have been no adjustment in the power, the amount of *change* in the power at steps 268 and 270 will nevertheless be changed from zero to some value above or below zero. Given the breadth of claim 1, even if the amount of the change in power were such that the amount of the change from this amplification loop was larger than from the previous amplification loop in a negative direction, the amount of the change would still be considered to have been raised (e.g., amount of change went from an absolute value of one to an absolute value of two). Thus, Schlueter teaches the amount of the change in transmission power is adjusted as a

function of the power ratio, such that when the power ratio increases, the amount of change of the power is raised as recited in claim 1.

For the above reasons, Appellants have not shown the Examiner erred in rejecting claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Dohi and Schlueter.

CONCLUSION

(1) Appellants have not shown the Examiner confused Schlueter's power and voltage adjustment teachings and thereby erred in rejecting claim 1 under § 103.

(2) Appellants have not shown the Examiner erred in finding Schlueter teaches the amount of change in the transmission power rises when the power ratio between the current transmission power and an average over time in transmission power increases in rejecting claim 1 under § 103.

DECISION

We have sustained the Examiner's rejection of claims 1-4 on appeal.

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).

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AFFIRMED

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