

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

Ex parte GUNTER GLEIM,  
HERMANN LINK and FRIEDRICH HEIZMANN

---

Appeal No. 96-0322  
Application 08/123,920<sup>1</sup>

---

ON BRIEF

---

Before URYNOWICZ, LEE and CARMICHAEL, Administrative Patent Judges.

LEE, Administrative Patent Judge.

**DECISION ON APPEAL**

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 12, 13, 16, 17 and 20-23.

Claims 1-11, 14, 15, 18 and 19 have been canceled. No claim has

---

<sup>1</sup> Application for patent filed September 20, 1993.

Appeal No. 96-0322  
Application 08/123,920

been allowed.

**References relied on by the Examiner**

Denk et al. (Denk)                      4,443,787                      April 17, 1984

**The Rejections on Appeal**

Claims 12, 13, 16, 17, and 20-23 stand finally rejected under 35 U.S.C. § 102(b) as being anticipated by Denk.

A rejection of claims 11, 15, 17 and 19 under 35 U.S.C. § 112, second paragraph, has been withdrawn by the examiner. (Br. at 2 and Answer at 2).

**The Invention**

The invention is directed to a method and apparatus for monitoring an alternating signal. A modified signal is generated having characteristics which are a measure of either the mark-to-space ratio or the direct current component in the alternating signal. Then, a comparison is made with respect to reference signals to provide results establishing the mark-to-space ratio or the direct current component of the alternating signal. A control signal is constructed which indicates malfunction when the mark-to-space exceeds a given value and/or when the direct

current component of the alternating signal is outside given values. Claims 20, 21 and 23 are the only independent claims.

Representative claim 20 is reproduced below:

20. A method for monitoring an alternating signal comprising the steps of: modifying said alternating signal into a modified signal having characteristics over time that are a measure for a mark-to-space ratio and/or for a direct-current component present in said alternating signal; comparing said modified signal with reference signals and results establishing said mark-to-space ratio and/or direct-current component of said alternating signal; constructing a control signal from said reference signals and a smoothed pulsed signal, said control signal being a measure of a potential malfunction when said mark-to-space ratio exceeds a given value and/or said direct-current component of said alternating signal is outside specifically given values; said alternating signal controls means having activities decreased to standby in response to said results of said comparing step.

#### Opinion

We will not sustain the rejection of claims 12, 13, 16, 17 and 20-23 under 35 U.S.C. § 102(b) as being anticipated by Denk.

Anticipation is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. In re Spada, 911 F.2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir.

1990); RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984).

The appellants argue that in Denk the sensor signal 1 is monitored with regard to whether amplitude values A and B have become exceeded, but is not monitored with regard to its

mark-to-space ratio. The argument is misplaced, since none of the claims requires a monitoring of the alternating signal's mark-to-space ratio. In each of independent claims 20, 21, and 23, the comparison of the modified signal and reference signals yields results which establish the mark-to-space ratio and/or the direct-current component of the signal. The disjunctive term "or" signifies either one or the other, in the alternative. Thus, it is not necessary that the mark-to-space ratio be monitored.

The appellants argue that the output signals from comparators 3 and 4 do not show any value which depends on the mark-to-space ratio or the direct-voltage component of the signal I. That is incorrect. The examiner is correct that the output signal of comparator 4 (shown in Denk's Figure 4) has a mark-to-space ratio which corresponds to that of the modified signal and

Appeal No. 96-0322  
Application 08/123,920

is dependent on the mark-to-space ratio of the input signal I. The appellants have not addressed this point made by the examiner and thus no error has been shown.

Nevertheless, the appellants are correct on one point. On page 3 of the brief, the appellants admit that stage 11 of Denk emits an output signal which is a measure for an error function of the sensor signal 1. The appellants argue, however, that the error function here is not of the required type, i.e., checking

whether a given mark-to-space ratio is exceeded or whether the direct-current component of the alternating signal is outside certain values. We agree with the appellants, at least insofar as finding that the examiner has not made out a **prima facie** case.

The examiner found (answer at 4, lines 9-11) the claimed feature at issue to be satisfied by Denk's detecting whether the alternating signal's amplitude is outside given direct-current values A and B (see figure 2). But that is misplaced. The claims require determining whether the **direct-current component** of the alternating signal is outside given values, not whether the instantaneous signal amplitude is outside given direct-current values. The claimed invention is directed to the direct-

Appeal No. 96-0322  
Application 08/123,920

current component of the signal, not its instantaneous amplitude. The direct-current component of an alternating signal is not the same as the signal's instantaneous amplitude. The examiner has failed to explain or otherwise show how Denk describes that a **direct-current component** of signal I is detected as being outside a given range for error detection.

For the foregoing reasons, we do not sustain the anticipation rejection of claims 12, 13, 16, 17 and 20-23.

Conclusion

The rejection of claims 12, 13, 16, 17 and 20-23 under 35 U.S.C. § 102(b) as being anticipated by Denk is reversed.

**REVERSED**

STANLEY M. URYNOWICZ                    )  
Administrative Patent Judge            )  
                                                  )  
                                                  )  
                                                  ) BOARD OF PATENT

Appeal No. 96-0322  
Application 08/123,920

JAMESON LEE	)	
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
	)	
JAMES T. CARMICHAEL	)	
Administrative Patent Judge	)	

Appeal No. 96-0322  
Application 08/123,920

Max Fogiel  
61 Ethel Road West  
Piscataway, NJ 08854