

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. 31

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MATS O. J. HEDBERG

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Appeal No. 1998-3036  
Application No. 08/404,920

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ON BRIEF

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Before HAIRSTON, KRASS, and BARRY, Administrative Patent Judges.

HAIRSTON, Administrative Patent Judge.

**DECISION ON APPEAL**

This is an appeal from the final rejection of claims 1-4, 6, 7, 9-11, 13-15, 19, 20, 23, 24, 26 and 27. In an Amendment After Final (paper number 24), claims 1, 7 and 26 were amended.

The disclosed invention relates to a circuit equipped with a signal receiver that can be regulated by either analog or digital control voltages, and the resistive properties of the circuit can be varied by connecting one or more control terminals of corresponding transistors in groups.

Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A connecting arrangement presenting resistive properties and values, said connecting arrangement comprising:

a plurality of transistor combinations connected between two conductors;

at least one control signal line, having an analog control voltage, connected to a first group of transistors creating a first transistor combination, wherein said first transistor combination is activated and deactivated in response to said analog control voltage on said first control signal line, and

at least one second control signal line, having an analog or digital control voltage, connected to a second group of transistors creating at least a second transistor combination, wherein said second transistor combination is activated or deactivated in response to said analog or digital control voltage,

wherein said analog control voltage and said analog or digital control voltage provides an operating voltage point of each transistor in the first and second transistor combinations approximately within a region where said each transistor in the first and second transistor combination presents resistive properties.

The reference relied on by the examiner is:

Dunlop et al. (Dunlop)	5,194,765	Mar. 16, 1993
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Claims 1-4, 6, 7, 9-11, 13-15, 19, 20, 23, 24, 26 and 27 stand rejected under 35 U.S.C. §112, second paragraph.

Claims 1-4, 6, 7, 9-11, 13-15, 19, 20, 23, 24, 26 and 27 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Dunlop.

### **OPINION**

We carefully considered the entire record before us and we will reverse the 35 U.S.C. § 112, second paragraph rejection of claims 1-4, 6, 7, 9-11, 13-15, 19, 20, 23, 24, 26 and 27. We will also reverse the 35 U.S.C. §103(a) of claims 1-4, 6, 7, 9-11, 13-15, 19, 20, 23, 24, 26 and 27 based upon the teachings of Dunlop.

### **35 U.S.C. §112, Second Paragraph Rejection**

According to the examiner, the claims are indefinite because it appears that the appellant meant to recite an analog or digital control signal, as opposed to just an analog control voltage to control a group of transistors (Answer, page 4). The examiner concludes (Answer page 4) that “[t]his is indefinite in the context of the claimed invention since appellant is relying on such language to overcome the rejection.”

In response, appellant argues (Brief, page 9) that, “[e]ither digital or analog control voltages can be connected to any of the transmission gates.” The appellant then specifies that different results will occur when employing a digital signal, and that different results will occur when employing an analog signal.

After reviewing the language used by the appellant to describe the invention in claims 1, 23 and 24, we cannot support the examiner’s position that the claim language is indefinite. On a first control line of the invention, the appellant has an analog control

voltage connected to a first group of transistors and on a second control line, the appellant has an analog or digital control voltage connected to a second group of transistors. Based upon appellant's disclosure, it is clear what the appellant is claiming. The mere fact that the disclosure (specification, page 13) states that either analog or digital control voltages may be used does not mean that appellant is required to recite both alternatives in the claims. The indefiniteness rejection is reversed.

### **35 U.S.C. §103(a) Obviousness Rejection**

According to the examiner (Answer, page 6), "[t]he fact that appellant claims an analog control voltage does not distinguish over the teachings of Dunlop et al[.] because the control voltage applied to the gates of the FETs 24 in this reference is the same as in appellant's invention, i.e., a fixed predetermined level voltage. Since the terminology 'analog voltage' is not clear (note the indefiniteness rejection above), this language does not define over Dunlop et al's teachings." We cannot sustain the 35 U.S.C. §103(a) rejection. As indicated supra, the examiner erroneously relied upon the 35 U.S.C. §112 rejection to address the appellant's "analog voltage" claim limitation. The 35 U.S.C. §112 rejection was not proper and, therefore, cannot be relied upon in the context of the examiner's obviousness rejection.

Finally, Dunlop does not disclose the use of an analog voltage. Although the examiner was correct in his assertion that Dunlop addresses the same problem as the

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appellant's invention (i.e., the elimination of undesirable reflections in a signal line by controlling the impedances within an integrated circuit (column 1, lines 60 to 66)), Dunlop teaches that "[e]ffective control of impedance values in integrated circuit applications is achieved with an integrated circuit transistor whose size is digitally controlled" (column 2, lines 54 and 55). Dunlop utilizes only digital signals to control the impedance values in an integrated circuit while the claimed invention utilizes both digital and analog signals to control impedance values. For this reason, the obviousness rejection is reversed.

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**DECISION**

The decision of the examiner rejecting claims 1-4, 6,7, 9-11, 13-15, 19, 20, 23, 24, 26 and 27 under the second paragraph of 35 U.S.C. § 112 and 35 U.S.C. § 103 (a) is reversed.

**REVERSED**

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
ERROL A. KRASS	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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LANCE LEONARD BARRY	)	
Administrative Patent Judge	)	

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BENTON S. DUFFETT, JR  
BURNS DOANE SWECKER & MATHIS  
P O BOX 1404  
ALEXANDRIA VA 22313-1404

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APPLICATION NO. 08/404,920

APJ HAIRSTON

APJ KRASS

APJ BARRY

DECISION: **REVERSED**

Prepared By: LETICIA PIHULIC

**DRAFT TYPED:** 26 Sep 01

**FINAL TYPED:**