

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte HANS W. BLECKMANN, HEINZ LORECK,  
MICHAEL ZYDEK, WOLFGANG FEY and PETER JONES

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Appeal No. 1998-0711  
Application 07/989,027

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ON BRIEF

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Before JERRY SMITH, BARRETT and LALL, Administrative Patent Judges.

JERRY SMITH, Administrative Patent Judge.

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's rejection of claims 1-5, 7-12, 14 and 15, which constitute all the claims remaining in the application. An amendment after final rejection was filed on July 1, 1996 and was approved for entry by the examiner.

The disclosed invention pertains to a circuit

configuration for use in an automotive vehicle control system. The control system is of the feedback type in which measured vehicle parameters are used to initiate control changes to vehicle elements. The effect of the control changes is detected by a change in the measured vehicle parameters, and the cycle is continuously repeated. Of particular note in the invention is that the vehicle elements are controlled by intelligent power drivers which are themselves connected to the control processor by way of a serial loop.

Representative claim 1 is reproduced as follows:

1. A circuit configuration for controlling a major number of electric or electromechanical consumers of an automotive vehicle control system where control signals generated by an electronic control unit responsive to sensing signals can be delivered to the consumers via amplifier stages,

wherein the amplifier stages are designed as "intelligent power drivers" comprising a power amplifier with integrated electronic controls and status monitors for producing status signals, and the amplifier stages are interconnected and connected to the control unit via a synchronous serial interface,

wherein a data transfer flows in a closed loop or chain from a serial exit of the control unit via the amplifier stages and back to a serial entry of the control unit, and comprises the control signals delivered to the amplifier stages and status signals returned from the amplifier stages,

and wherein the circuit configuration provides for an

Appeal No. 1998-0711  
Application 07/989,027

operating cycle and for an activation instruction or a transfer instruction for controlling connections of the data transfer through the closed loop or chain between the amplififier[sic, amplifier] stages and control unit.

The examiner relies on the following references:

Hartford et al. (Hartford)	4,255,789	Mar. 10, 1981
Paredes et al. (Paredes)	4,347,563	Aug. 31, 1982

Kamal N. Majeed, "Dual Processor Automotive Controller," IEEE, 1988, pages 39-44.

Claims 1-5, 7-12, 14 and 15 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Hartford in view of Majeed and Paredes.<sup>1</sup>

Rather than repeat the arguments of appellants or the examiner, we make reference to the briefs and the answers for the respective details thereof.

#### OPINION

We have carefully considered the subject matter on appeal, the rejection advanced by the examiner and the evidence of obviousness relied upon by the examiner as support for the rejection. We have, likewise, reviewed and taken into

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<sup>1</sup> The final rejection relied on the teachings of Hartford and Majeed only. Paredes was added to this combination in the examiner's answer as a new ground of rejection.

Appeal No. 1998-0711  
Application 07/989,027

consideration, in reaching our decision, the appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejection and arguments in rebuttal set forth in the examiner's answers.

It is our view, after consideration of the record before us, that the evidence relied upon and the level of skill in the particular art would not have suggested to one of ordinary skill in the art the obviousness of the invention as set forth in claims 1-5, 7-12, 14 and 15. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art

Appeal No. 1998-0711  
Application 07/989,027

as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant 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. See Id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Passaic, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976). Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could

Appeal No. 1998-0711  
Application 07/989,027

have made but chose not to make in the brief have not been considered [see 37 CFR § 1.192(a)].

The examiner cites Hartford as teaching a closed-loop control system for controlling various elements of an automotive vehicle. Although the examiner acknowledges that Hartford does not disclose the claimed data transferring loop through the serial port interface, the examiner finds such feature to be old and well known in the art [answer, page 5]. Majeed is cited as a teaching of using two processors in an automotive controller. The examiner also acknowledges that Majeed does not disclose the claimed serial chain through the control driver units and back to a serial entry of the control unit, but the examiner again asserts that this feature is well known in the art [*id.*, page 6]. Paredes is cited as teaching a control system in which serial communication is disclosed. The examiner concludes that the claimed invention would have been obvious within the meaning of 35 U.S.C. § 103 in view of the collective teachings of Hartford, Majeed and Paredes.

Appellants argue that each of independent claims 1, 14

and 15 effectively recites a serial data transfer loop between the output of the control processor, a series connected chain of power drivers, and the input of the control processor.

Appellants argue that neither Hartford nor Majeed discloses a closed loop serial link for transferring control signal information from the control unit to the amplifier stages and for transferring amplifier status signal data back to the control unit [brief, pages 5-8]. Appellants also argue that the dual processor arrangement of claim 15 is not suggested by the teachings of the applied references. Finally, appellants argue that the teachings of Paredes do not overcome the basic deficiencies in the combination of Hartford and Majeed as argued in the brief [reply brief].

We agree with appellants' position for the reasons set forth in the briefs. The examiner has only cited prior art which has the conventional closed loop connections of a feedback control system. The fundamental difference between the closed loop control of Hartford and Majeed and the closed loop data flow of the claimed invention occurs at the power drivers of the amplifier stages. In the conventional closed loop control of the applied prior art, the drivers themselves

Appeal No. 1998-0711  
Application 07/989,027

are not monitored and their status is not fed back to the control unit. Only the effect of the drivers is monitored. For example, the driver in a conventional brake control system is not directly monitored, but the effect of the driver is monitored by taking measurements of vehicle parameters such as wheel speed. This is the type of control taught by the closed loop control systems of Hartford and Majeed.

The independent claims on appeal, however, are directed to the data flow path that runs in a serial chain from the first control unit MC 1 [Figure 1], the serial OUT line, amplifier stages VS 1 to VS n, and the serial IN line back to control unit MC 1. The applied prior art has no teachings or suggestions with respect to this claimed serial data path, and this claimed feature is not obvious despite the examiner's beliefs to the contrary. The claimed serial data path is fundamentally different from the closed loop data path of Hartford and Majeed as identified by the examiner.

The examiner's findings that serial communication and closed loop systems were known in the art are not sufficient to support a conclusion that the claimed invention would have been obvious. The examiner's findings fail to address the

Appeal No. 1998-0711  
Application 07/989,027

specific recitations of the claims on appeal.

Appellants' arguments with respect to the dual processor requirements of claim 15 are also correct. The two processors of Majeed perform entirely different calculations on the data. Thus, the two processors of Majeed cannot develop identical control signals, and Majeed clearly does not check for the consistency of data exchanged between the two processors.

In summary, the examiner's rejection does not properly address the specific limitations of the appealed claims. Thus, the examiner has failed to establish a prima facie case of obviousness. Accordingly, we do not sustain the examiner's

Appeal No. 1998-0711  
Application 07/989,027

rejection of the appealed claims. Therefore, the decision of the examiner rejecting claims 1-5, 7-12, 14 and 15 is reversed.

REVERSED

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JERRY SMITH	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
LEE E. BARRETT	)	)
Administrative Patent Judge	)	APPEALS AND
	)	
	)	INTERFERENCES
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PARSHOTAM S. LALL	)	
Administrative Patent Judge	)	

Appeal No. 1998-0711  
Application 07/989,027

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