

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(2) is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte KEN-ICHI HOSHINO,  
NOBUHARU KOBAYASHI, HIROTO MIZUTANI,  
and HIROKI TERAOKA

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Appeal No. 1997-0322  
Application 08/014,574<sup>1</sup>

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HEARD: NOVEMBER 4, 1999

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

JERRY SMITH, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134  
from the examiner's final rejection of claims 15-23, which

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<sup>1</sup> Application for patent filed February 5, 1993.

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constitute all the claims remaining in the application. An amendment after final rejection was filed on December 29, 1994 and was entered by the examiner. A second amendment after final rejection was filed on October 6, 1995 and was also entered by the examiner. The final rejection of the claims under 35 U.S.C. § 101 has been withdrawn by the examiner [supplemental answer, page 2]. A new ground of rejection of the claims under 35 U.S.C. § 112 made in the initial answer has also now been withdrawn [*id.*, pages 1-2]. The remaining rejections apply only to claims 15, 16, 19, 20, 22 and 23. Therefore, this appeal is now only directed to the rejection of claims 15, 16, 19, 20, 22 and 23.

The disclosed invention pertains to an apparatus for measuring a traveling direction of a vehicle. More particularly, the outputs of a geomagnetic sensor mounted on the vehicle are cyclically obtained, and a deviation is determined between the sensor output and a standard azimuth circle for each cycle. The various cycles are weighted based on the calculated deviations such that current cycle values are given a smaller weight than prior cycle values as the

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magnitude of the calculated deviation increases. The weighted values are used to calculate signals indicative of the traveling direction of the vehicle.

Representative claim 15 is reproduced as follows:

15. An electronic apparatus for measuring a traveling direction of a vehicle in cycles, comprising:

a geomagnetic sensor mounted to the vehicle for detecting geomagnetism around the vehicle and outputting electric signals corresponding to the geomagnetism;

an electronic calculator receiving the electric signals from the geomagnetic sensor, said calculator including:

current cycle value deriving means for deriving a current cycle value of a coordinate position of the geomagnetism detected by the geomagnetic sensor based on the electric signals,

deviation magnitude deriving means for deriving a magnitude of a deviation between the current cycle value and an item associated with a standard azimuth circle,

weight setting means for setting a weighting for the current cycle value of the geomagnetism and a prior cycle value of the geomagnetism depending on the magnitude of the deviation in each cycle such that the current cycle value has a smaller weight than the prior cycle value as the magnitude of the deviation increases,

mean data deriving means for deriving mean data from said current cycle value and said prior cycle value using said weighting, and

traveling direction deriving means for deriving the traveling direction of the vehicle based on said mean data; and

means for producing a signal indicating a traveling direction of the vehicle based on an output of said traveling direction deriving means.

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The examiner relies on the following references:

Helldörfer et al. (Helldörfer) 1991	4,989,333	Feb. 05,
Ueno et al. (Ueno) 1992	5,170,354	Dec. 08,
Kendall 1993	5,253,424	Oct. 19,

(filed Dec. 27,  
1991)

Claims 15, 16, 19, 20, 22 and 23 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Helldörfer alone with respect to claims 15, 16 and 23, Helldörfer in view of Ueno with respect to claims 19 and 20, and Helldörfer in view of Kendall with respect to claim 22.

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 rejections advanced by the examiner and the evidence of obviousness relied upon by the examiner as support

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for the rejections. We have, likewise, reviewed and taken into 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 15, 16, 19, 20, 22 and 23. Accordingly, we reverse.

Appellants have indicated that for purposes of this appeal the claims will all stand or fall together as a single group [brief, page 7]. Consistent with this indication appellants have made no separate arguments with respect to any of the claims on appeal. Since there are several rejections before us, appellants' grouping will be accepted as a representation that all the claims within each rejection will stand or fall together. Note In re King, 801 F.2d 1324, 1325, 231 USPQ 136, 137 (Fed. Cir. 1986); In re Sernaker, 702 F.2d

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989, 991, 217 USPQ 1, 3 (Fed. Cir. 1983). Accordingly, we will only consider the rejections against a single claim from each separate rejection as representative of all the claims on appeal.

As noted above, the only rejections remaining on appeal before us are made under 35 U.S.C. § 103. 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 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.

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

We consider first the rejection of claims 15, 16 and 23 based on the teachings of Helldörfer taken alone. We will consider independent claim 15 as the representative claim for this rejection. The examiner's rejection basically asserts that Helldörfer teaches the invention of claim 15 except for the claimed weight setting means. The examiner observes that the claimed weight setting means is nothing more than the use of a conventional weighted average well known in statistical processing. The examiner concludes that it would have been obvious to the artisan to set weights as recited in claim 15 based on common statistical methods [answer, pages 13-14; supplemental answer, pages 4-5].

Appellants argue that the weight factor  $k$  of Helldörfer is not changed each cycle as recited in claim 15 and that the weight factor of a current cycle is not made smaller than the weight factor of a previous cycle as the magnitude of the deviation between a current cycle and a standard azimuth circle increases. Appellants also argue that the claimed means for deriving mean data using these weightings is not taught or suggested by Helldörfer [brief,

pages 27-30]. The examiner simply reiterates his position that appellants are making use of a commonly used statistical technique for the express purpose for which it was intended to be used, namely, to eliminate bias or spurious readings [supplemental answer, pages 8-10; second supplemental answer, page 2].

After a careful consideration of the complete record in this case, we agree with the position of appellants. The examiner's position that the claimed weight setting means is nothing more than the use of a standard statistical method is not accurate. The claimed weight setting means calculates a new weight value during every sampled cycle of the geomagnetic sensor and changes the weight value each cycle based on the magnitude of the deviation between a current cycle value and a standard azimuth circle. The type of weighting referred to by the examiner and taught by Helldörfer is to select a constant weighting factor to achieve a desired time dependent weighting of values regardless of the magnitude of sampled values. Such selection of a constant weighting factor is the antithesis of what appellants are seeking to accomplish with the claimed

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weight setting means. Helldörfer would not have suggested a weight setting means operative to change weight factors during each sampling cycle of the geomagnetic sensor because the weight factor  $k$  in Helldörfer is selected as a function of the sampling interval and would remain the same as long as the sampling interval is not changed. When the weighting factor  $k$  is changed in Helldörfer, it is changed as a function of sampling time and not as a function of the deviation in sampled values as recited in claim 15.

In summary, the examiner's attempt to equate the claimed weight setting means with a standard statistical method is in error. Therefore, the examiner has not established a prima facie case of the obviousness of independent claim 15. Thus, we do not sustain the rejection of claim 15 or of claims 16 and 23 which are grouped therewith.

We now consider the rejection of claims 19 and 20 based on Helldörfer and Ueno and of claim 22 based on Helldörfer and Kendall. Each of these claims depends from claim 15. The additional references were cited only to meet

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limitations of the dependent claims and do not overcome the deficiencies in Helldörfer discussed above. Since the rejection of these claims is based on the deficient teachings of Helldörfer, we also do not sustain the rejection of these claims under 35 U.S.C. § 103.

In summary, we have not sustained any of the examiner's rejections of the claims under 35 U.S.C. § 103. Therefore, the decision of the examiner rejecting claims 15, 16, 19, 20, 22 and 23 is reversed.

REVERSED

	Jerry Smith	)	
	Administrative Patent Judge	)	
		)	
		)	
		)	
	Parshotam S. Lall	)	BOARD OF
PATENT	Administrative Patent Judge	)	APPEALS AND
		)	INTERFERENCES
		)	
		)	
	Anita Pellman Gross	)	
	Administrative Patent Judge	)	

Cushman, Darby & Cushman

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1100 New York Avenue, N.W.  
Ninth Floor  
Washington, DC 20005-3918

JS/cam

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