

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opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.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. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte LALIT KUMAR

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Appeal No. 96-4002  
Application No. 08/121,849<sup>1</sup>

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ON BRIEF

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Before BARRETT, FLEMING, and RUGGIERO, Administrative Patent Judges.

RUGGIERO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the final rejection of claims 1-20, all of the claims pending in the application.

The claimed invention relates to a method and apparatus for distinguishing between true and false echoes in an

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<sup>1</sup> Application for patent filed September 16, 1993.

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ultrasonic liquid gauging system. More particularly, Appellant indicates at page 5 of the specification that true and false echoes in an echo profile are discriminated by determining the relative or actual energy content of the received echo signals.

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

1. A method for discriminating true and false echoes in an ultrasonic liquid gauging system comprising the steps of:

a. transmitting an ultrasonic pulse toward the liquid surface;

b. detecting true and false echoes after a transmission; and

c. identifying a true echo from a false echo based on energy of the echoes by determining which echo has the higher energy.

The Examiner relies on the following references:

Snyder	4,000,650	Jan. 04,
1977		
Baumoel	4,203,324	May 20,
1980		
Leszczynski	5,157,639	
Oct. 20, 1992		

Claims 1-20 stand finally rejected under 35 U.S.C. § 103 as being unpatentable over Leszczynski in view of Snyder and Baumuel.

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Rather than reiterate the arguments of Appellant and the Examiner, reference is made to the Brief and Answer 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 for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, Appellant's arguments set forth in the Brief along with the Examiner's rationale in support of the rejections and arguments in rebuttal set forth in the Examiner's Answer. It is our view, after consideration of the record before us, that the collective 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 1-20. Accordingly, we reverse.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to

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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. denied, 488 U.S.  
825  
(1988); Ashland Oil, Inc. v. Delta Resins & Refractories,  
Inc.,

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776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 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).

With respect to independent claims 1 and 8, the Examiner seeks to modify the ultrasonic liquid gauging system of Leszczynski by relying on Snyder and Baumel to supply the missing teaching of utilizing echo signal energy content rather than peak amplitude to discriminate between true and false echoes. In the Examiner's view, the desire to reduce costs by using integrated digital circuitry would serve as a motivating factor to one of ordinary skill to modify Leszczynski with the teachings of Snyder and Baumel.

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At the outset, we note that both Appellant and the Examiner agree that Leszczynski discriminates echoes on the basis of amplitude rather than energy content of the received echoes. Appellant's initial point of contention is that Snyder also is deficient in teaching the determination of the energy content of any particular echo. In Appellant's view (Brief, page 11), Snyder's approach to echo discrimination is merely to add together a plurality of peak magnitude values of echoes resulting from a succession of transmitted pulses to develop a normalized sum value which would be greater than a sum corresponding to a random noise signal.

Upon careful review of the Snyder reference, we are in agreement with Appellant's stated position in the Brief. In our opinion, the integration operation in Snyder relied on by the Examiner does not result in the determination of energy content or "area under the curve" of any echo but rather supplies only a summation of peak values of a succession of echo signals.

With respect to the Baumel reference as well, we find ourselves in agreement with Appellant. From the Examiner's statement of the grounds of rejection, Baumel was cited

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merely as evidence that integration of a signal over a predetermined time span will provide an indication of the energy content of such signal. As Appellant has asserted (Brief, page 13), this is a mere statement of a mathematical principle which is not in dispute. In our opinion, the teachings of Baumel do not solve the deficiencies of the Examiner's proposed combination of Leszczynski and Snyder. Baumel is not concerned with echo discrimination and, further, Baumel's disclosed summation of all of the reflected signals to measure rate of decay does not provide a teaching of energy content determination of a particular echo.

We further agree with Appellant's arguments that the Examiner has failed to provide proper motivation for the proposed combination of Leszczynski, Snyder, and Baumel. It is our view that, even assuming arguendo that Snyder and Baumel provide for echo energy content determination, no motivation exists for modifying Leszczynski in the manner suggested by the Examiner. The Examiner's position that the desire for cost reduction would lead the skilled artisan to modify Leszczynski to utilize digital integrated circuitry such as in Snyder and Baumel is inapposite since the existing

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disclosure of Leszczynski is replete with digital circuitry. It is our opinion that the only basis for applying Snyder's and Baumuel's teachings to Leszczynski comes from an improper attempt to reconstruct Appellant's invention in hindsight. Accordingly, we can not sustain the Examiner's obviousness rejection of independent claims 1 and 8. Since all of the limitations of independent claims 1 and 8 are not suggested by the applied prior art, we can also not sustain the Examiner's rejection of appealed claims 2-7 and 9-20 which depend therefrom.

In conclusion, we have not sustained the Examiner's rejection of any of the claims on appeal under 35 U.S.C. § 103. Accordingly, the decision of the Examiner rejecting claims 1-20 is reversed.

REVERSED

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LEE E. BARRETT	)	
Administrative Patent Judge	)	
	)	
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	)	
	)	BOARD OF PATENT
MICHAEL R. FLEMING	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
JOSEPH F. RUGGIERO	)	
Administrative Patent Judge	)	

lp

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APJ RUGGIERO

APJ FLEMING

APJ BARRETT

DECISION: REVERSED  
Send Reference(s): Yes No  
or Translation (s)  
Panel Change: Yes No  
Index Sheet-2901 Rejection(s): \_\_\_\_\_

Prepared: May 22, 2000

Draft    Final

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PALM / ACTS 2 / BOOK  
DISK (FOIA) / REPORT