

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. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte MARTIN FUCHS, MATTHEW J. BANET,  
KEITH A. NELSON and JOHN A. ROGERS

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Appeal No. 2001-1072  
Application No. 09/087,141

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ON BRIEF

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Before HAIRSTON, GROSS, and BARRY , Administrative Patent Judges.  
HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 46.

The disclosed invention relates to a method and apparatus for measuring a property of a structure.

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

1. An apparatus for measuring a property of a structure, comprising:  
a microchip laser that generates an optical pulse;

a diffractive element that receives the optical pulse and diffracts it to generate at least two excitation pulses;

an optical system that receives at least two optical pulses and spatially and temporally overlaps them on or in the structure to form an excitation pattern that launches an acoustic wave, electronic response, or thermal response that modulates at least a portion of the structure;

a light source that produces a probe beam that reflects off the portion of the structure to generate a signal beam;

an optical detection system that receives the signal beam and in response generates a light-induced electrical signal; and

an analyzer that analyzes the light-induced electrical signal to measure the property of the structure.

The references relied on by the examiner are:

Zayhowski	5,394,413	Feb. 28, 1995
Rogers et al. (Rogers)	5,546,811	Aug. 20, 1996
Rogers et al. (Rogers)	5,734,470	Mar. 31, 1998
Nelson et al. (Nelson)	5,812,261	Sept. 22, 1998

(effective filing date July 15, 1996)

Nelson et al. (Nelson), "Optical generation of tunable ultrasonic waves," Journal of Applied Physics, Vol. 53, No. 2, Feb. 1982, pp. 1144-1149.

Claims 1 through 13, 15 through 19, 21 through 34 and 45 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 through 8 and 25 of Rogers '470 in view of Zayhowski.

Claims 1 through 13, 15 through 19, 21 through 34 and 45 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 through 33 of Nelson in view of Zayhowski.

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Claims 1 through 34 and 45 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rogers '811 in view of Zayhowski.

Claims 35 through 44 and 46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Rogers '811 in view of Zayhowski and the Nelson publication.

Reference is made to the brief (paper number 15) and the answer (paper number 16) for the respective positions of the appellants and the examiner.

#### OPINION

We have carefully considered the entire record before us, and we will sustain the obviousness rejection of claims 35 through 44 and 46, and reverse the remainder of the rejections of record.

Appellants have not challenged the propriety of combining the teachings of Zayhowski and the Nelson publication with the Rogers patents and the Nelson patent. Appellants' sole challenge to all of the rejections of record is that the claims of Rogers '470 and Nelson are limited to a light source that produces a probe beam that is diffracted, as opposed to reflected, off a portion of a structure (brief, pages 4 through 6). The same argument is made concerning the teachings of Rogers '811 (brief, pages 5 and 6).

We agree with appellants' argument that the claims of Rogers '470 and Nelson are limited to a diffracted probe beam as opposed to a reflected probe beam. With respect to the teachings of Rogers '811, we agree with the appellants that the probe beam 18 only produces diffracted beams 20 and 20' (Figure 1A; column 1, lines 40 through 48; column 5, lines 34 through 39). Appellants have

challenged the examiner's conclusion that "[b]y definition the 0th order of diffraction is the specular **reflection** of the probe beam" by referring to Rogers '470 which discloses "in Col. 7, line 65 to Col. 8, line 1, the zeroth order is spatially filtered and the +1 and -1 diffracted orders are used to generate measurements" (brief, page 6; answer, page 6). The examiner has not presented any evidence or convincing arguments to rebut the appellants' challenge. Thus, the obviousness-type double patenting rejections of claims 1 through 13, 15 through 19, 21 through 34 and 45, and the obviousness rejection of claims 1 through 34 and 45 are reversed because Rogers '470, Nelson and Rogers '811 neither teach nor would have suggested to one of ordinary skill in the art a reflected probe beam.

The obviousness rejection of claims 35 through 44 and 46 is sustained because these claims are not limited to a reflected probe beam. As correctly noted by the examiner, these claims are directed to either a diffracted probe beam or a reflected probe beam (answer, page 8).

#### DECISION

The decision of the examiner is affirmed as to the obviousness rejection of claims 35 through 44 and 46, and is reversed as to all of the other rejections of record. Accordingly, the decision of the examiner is affirmed-in-part.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED IN PART

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
	)	BOARD OF PATENT
ANITA PELLMAN GROSS	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
LANCE LEONARD BARRY	)	
Administrative Patent Judge	)	

KWH/lp

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