

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(2) is not binding precedent of the Board.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 ELDON L. GORDON

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Appeal No. 1997-3164  
Application 08/397,024

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ON BRIEF

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Before JERRY SMITH, FLEMING and DIXON, 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 1-4, 6-9, 13, 14 and 23-27. Claims 5, 10-12 and 15-22 had been cancelled. An amendment after final rejection was filed on September 3, 1996 and was entered by the examiner. This amendment and a

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concurrently filed terminal disclaimer resulted in the allowance of claims 1-4, 6-9, 13, 14 and 25-27. Consequently, only claims 23 and 24 remain rejected in this application and are on appeal before us.

The disclosed invention pertains to the art of tuning a dual frequency cavity backed slot antenna.

Representative claim 23 is reproduced as follows:

23. A method of tuning a dual frequency cavity backed slot antenna comprising the steps of:

(a) providing a substrate with a surface, said surface including thereon:

(i) a continuous slot;

(ii) first electrically conductive metallization disposed internal of said slot and extending to said slot;

(iii) second electrically conductive metallization disposed external to said slot and extending to said slot, said first and second electrically conductive metallization defining said slot; and

(iv) at least one pair of axially aligned frequency adjusting means, said pair comprising one of an indentation or a tab in each of said first and second electrically conductive metallization; and

(b) then altering the dimensions of at least one of said tabs or indentations to adjust the frequency of said antenna.

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The examiner relies on the following reference:

Schnetzer et al. (Schnetzer)            5,194,876            Mar. 16,  
1993

Claims 23 and 24 stand rejected under 35 U.S.C. § 103. As evidence of obviousness the examiner offers Schnetzer taken alone.

Rather than repeat the arguments of appellant 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 consideration, in reaching our decision, the appellant's 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

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ordinary skill in the art the obviousness of the invention as set forth in claims 23 and 24. 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 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

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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 appellant have been considered in this decision. Arguments which appellant could have made but chose not to make in the brief have not been considered [see 37 CFR § 1.192(a)].

With respect to claim 23, the examiner points to the substrate of Figure 8 of Schnetzer which is provided with 1) a continuous slot 133, 2) first electrically conductive metallization 131b, 3) second electrically conductive metallization 131a, and 4) a pair of axially aligned frequency adjusting means 137 [final rejection, Paper No. 16]. The

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examiner observes that Schnetzer teaches that the indentations 137 may be adjusted as needed. The examiner concludes that it would have been obvious to adjust the dimensions of the indentations 137 in Schnetzer in order to alter the frequency characteristics of the antenna as taught by Schnetzer [id.].

Appellant argues that the claimed invention operates to tune both frequencies of a dual frequency antenna. Appellant also argues that the altering step of the invention must take place after assembly of the antenna and that such post-assembly alteration is not taught or suggested by Schnetzer [main brief]. The examiner responds that all antennas operate at two frequencies. The examiner also argues that the claim does not require that the alteration of dimensions take place after assembly of the antenna. According to the examiner, adjustments made to the indentations 137 in Schnetzer at the time of manufacture would satisfy the language of the claims [initial answer].

Appellant responds that the claims are inherently limited to an antenna that provides a dual frequency output. Appellant also reiterates that the invention requires that the slots be alterable after fabrication of the antenna.

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Additionally, appellant argues that a dual frequency cavity backed slot antenna is defined in the specification as a particular type of antenna which is not taught or suggested by Schnetzer [first reply brief].

The examiner responds that the claims do not require two frequency tuning or that the adjustment take place after fabrication of the antenna. The examiner also asserts that the preamble of claim 23 does not require that limitations from the specification be read into the claim as asserted by appellant [supplemental answer]. Appellant responds by reiterating his position that the claimed invention relates to a dual frequency cavity backed slot antenna as defined in the specification [second reply brief].

It is clear that the propriety of the rejection in this case hinges directly on the correct interpretation of the scope of the claims. There is basically no dispute as to what the patent to Schnetzer teaches. The dispute between the examiner and appellant revolves around the question of whether the claimed invention is broad enough to be suggested by the teachings of Schnetzer within the meaning of 35 U.S.C. § 103.

With respect to the question of whether claim 23 requires that the alteration step take place after fabrication of the antenna, we agree with the examiner that claim 23 is not so limited. The claim recites the steps of providing a substrate of a certain type and altering dimensions of the tabs on the substrate. We agree with the examiner that the Schnetzer substrate shown in Figure 8 is initially provided without the indentations which are etched after the slots have been formed [column 8, lines 28-41]. As the indentations 137 are etched in Schnetzer at the time of fabrication, the step of altering the dimensions of the indentations after the substrate has been provided is satisfied as recited in claim 23.

With respect to the question of whether the claimed invention requires that the method adjust two frequencies of a dual frequency cavity backed slot antenna, we agree with appellant. The preamble of claim 23 recites that the method is for tuning a dual frequency cavity backed slot antenna. Step (b) recites that the altering of dimensions adjusts "the frequency" of "said antenna." The phrase "the frequency" must refer to the dual frequency of the preamble, and the phrase

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"said antenna" must refer to the dual frequency cavity backed slot antenna of the preamble. Thus, the altering step of claim 23 clearly applies the method to the specific antenna set forth in the preamble of claim 23. Appellant argues that this specific antenna is defined in the specification as an antenna which operates at two frequencies which can be simultaneously tuned.

The examiner finds obviousness based upon his observation that "all antennas operate at two frequencies" [answer, page 4], or that "all antennas may operate at more than one frequency" [supplemental answer, page 2]. We do not find anything of record in this application which provides independent support for this broad assertion of the examiner. Although antennas may be capable of operating at more than one frequency through appropriate tuning, there is nothing in Schnetzer which suggests that the dual frequencies of a dual frequency cavity backed slot antenna can be adjusted by altering the dimensions of the tabs or indentations as recited in claim 23.

For reasons discussed above, we find that the examiner has not properly given consideration to all the limitations

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set forth in the claims. Therefore, the examiner has failed  
to

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establish a prima facie case of obviousness. Accordingly, the decision of the examiner rejecting claims 23 and 24 is reversed.

REVERSED

Jerry Smith	)	
Administrative Patent Judge	)	
	)	
	)	
	)	
Michael R. Fleming	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
	)	
Joseph L. Dixon	)	
Administrative Patent Judge	)	

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