

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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. 34

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DENNIS L. DULL

Appeal No. 1997-4235
Application No. 08/464,426

ON BRIEF

Before WALTZ, DELMENDO, and MOORE, Administrative Patent Judges.
DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 21 through 29 in the above-identified application. Claims 30 through 32, which are the only other pending claims, have been indicated as "allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims."
(Examiner's answer of Nov. 16, 2001, paper 27, page 2.)

The subject matter on appeal relates to a radome including a patterned copper film functioning as a frequency selective surface. Further details of this appealed subject matter are recited in illustrative claim 21 reproduced below:

21. A radome including a patterned copper film functioning as a frequency selective surface, the film having complex curvature, a nominal thickness of about 0.1 mil, and fine-line circuit elements with controlled undercut etched in the area of complex curvature to line widths ranging from about 3 - 10 ± 0.25 mils, and at least one dielectric sheet to support the film.

In addition to what is perceived by the examiner to be the admitted prior art, the examiner relies on the following prior art references as evidence of unpatentability:

Burton et al. (Burton)	3,907,565	Sep. 23, 1975
Purinton	3,961,333	Jun. 01, 1976
Traut	4,659,598	Apr. 21, 1987
L. Missel and F.D. Murphy (Missel), "Steady State Etching of Copper," <u>Metal Finishing</u> , Dec. 1969, 47-52, 58.		

Claims 21 through 26 and 29 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Burton, Purinton, and "the appellant's disclosure of the prior art," in view of Missel. (Answer, pages 4-7.) Further, claims 27 and 28 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable

over Burton, Purinton, and the "the appellant's disclosure of the prior art," in view of Missel and Traut. (Id. at page 7.)¹

Because the examiner's rejections are based on an erroneous understanding of the appellant's admissions concerning the prior art, we reverse the aforementioned rejections.

The examiner finds that Burton (column 2, lines 3-41; column 3, line 14) describes a radome made by forming a thin copper layer on a dielectric substrate, applying a photoresist, patterning the photoresist, and etching. (Answer, page 4.) According to Burton (column 2, lines 37-38), the "spiral lines" of the pattern obtained after etching should "remain sharp and distinct." The examiner also finds that "Purinton discloses forming a radome by etching a copper layer on a thin sheet of dielectric material by common printed circuit board techniques..." (Answer, page 4.)

The examiner then characterizes the differences between the invention recited in the appealed claims and the disclosures of Burton and Purinton as follows (id.):

Burton and Purinton differ from the appellant's claims mainly in that they may not disclose dimensions associated with the layer thicknesses or pattern tolerances, nor do Burton and Purinton disclose any

¹ All other rejections as set out in the Feb. 26, 2001 final Office action (paper 24) have been withdrawn. (Answer, p. 2.)

Appeal No. 1997-4235
Application No. 08/464,426

particular etchants for carrying out the etching steps when making the radomes.

In an attempt to account for the differences between the claimed invention and the closest prior art, the examiner relies on the appellant's discussion in the "Background of the Invention" at pages 1 and 2 of the specification. (Answer, page 4-5.) On the basis of the evidence identified above, the examiner concludes (id.):

In view of appellant's disclosure of the prior art of the problems with etching complex curvature articles with ferric chloride etchants, there would be a motivation of one of ordinary skill in the art at the time the invention was made to try and find a better etching solution capable of achieving better line widths in complex curvature articles such as Burton's and Purinton's radomes.

We agree with the appellant (appeal brief filed Aug. 31, 2001, paper 26, pages 8-10) that the examiner's position is not well founded. Nothing in the specification indicates that the problems of the prior art, as described in the specification, were known to those having ordinary skill in the art.

Accordingly, the examiner committed reversible error by using the appellant's own disclosure to fill the missing gaps in the prior art references and relying on it as the motivation, suggestion, or teaching to combine the prior art references.

W.L. Gore & Assoc. v. Garlock, Inc., 721 F.2d 1540, 1553, 220

USPQ 303, 312-13 (Fed. Cir. 1983) ("To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.").

The examiner argues: "In addition, since Burton and Purinton fail to disclose the proper etchant for their radome manufacture, there would be a motivation to optimize for the best etchant suitable for such manufacture." (Answer, page 5.) To support the optimization theory, the examiner refers to the teachings of Missel. (Id.) What is missing, however, is any evidence from the prior art to establish that one of ordinary skill in the art would have optimized the fine-line circuit elements in a radome having complex curvature to have the recited tolerances. In this regard, the specification (pages 1-2) states:

With a conventional etching process, like those using ferric chloride, it is difficult, if not impossible, to achieve line widths ranging from 3-10 \pm 0.25 mils (0.003 - 0.010 in) even on flat boards, because of the etch rate and inherent process delays. Our applications require this close tolerance on large parts having complex curvature.

Nothing in the prior art suggests that the tolerances of the line widths should be optimized to the recited specific values.

Appeal No. 1997-4235
Application No. 08/464,426

As stated by a predecessor of our reviewing court,

“ [o]bviousness cannot be predicated on what is unknown.” In re Shetty, 566 F.2d 81, 86, 195 USPQ 753, 756-57 (CCPA 1977) (quoting In re Spormann, 363 F.2d 444, 448, 150 USPQ 449, 452 (CCPA 1966)).

For these reasons, we reverse the examiner's rejections under 35 U.S.C. § 103(a) of (1) appealed claims 21 through 26 and 29 as unpatentable over Burton, Purinton, and the “the appellant's disclosure of the prior art,” in view of Missel and (2) claims 27 and 28 as unpatentable over Burton, Purinton, and the “the appellant's disclosure of the prior art,” in view of Missel and Traut.

Appeal No. 1997-4235
Application No. 08/464,426

The decision of the examiner is reversed.

REVERSED

Thomas A. Waltz)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
Romulo H. Delmendo)	
Administrative Patent Judge)	APPEALS AND
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)	INTERFERENCES
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James T. Moore)	
Administrative Patent Judge)	

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Appeal No. 1997-4235
Application No. 08/464,426

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