

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. 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 ALAN A. GALE, THOMAS A. FISKE,  
and SIMON KOROWITZ

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Appeal No. 2000-1787  
Application No. 08/646,735

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ON BRIEF<sup>1</sup>

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Before COHEN, STAAB, and BARRETT, Administrative Patent Judges.  
COHEN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1 through 9. These claims constitute all of the claims remaining in the application.

Appellants' invention pertains to a method for manufacturing a printed circuit board and to a method for manufacturing a

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<sup>1</sup> Attendance at the oral hearing set for Thursday, October 11, 2001 was waived by appellants (Paper No. 22).

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PCMCIA printed circuit board. A basic understanding of the invention can be derived from a reading of exemplary claims 1 and 7, respective copies of which appear in Attachment I accompanying the main brief (Paper No. 13).

As evidence of obviousness, the examiner has applied the documents listed below:

Hargis	4,426,773	Jan. 24, 1984
Sarma et al. (Sarma)	5,258,323	Nov. 2, 1993
Beers	5,680,936	Oct. 28, 1997 (filed Mar. 14, 1995)

The following rejections are before us for review.

Claim 8 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.<sup>2</sup>

Claims 1 through 3 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Hargis.

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<sup>2</sup> The examiner did not list an indefiniteness rejection under section 10 of the answer, but makes it clear on pages 10 and 11 of the answer that only the final rejection of claim 8 is maintained as "not fully definite."

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Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Beers.

Claims 5 and 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Sarma.

Claims 7 through 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Beers.

The full text of the examiner's prior art rejections and response to the argument presented by appellants appears in the answer (Paper No. 14), while the complete statement of appellants' argument can be found in the main and reply briefs (Paper Nos. 13 and 16).

In the matter of the respective prior art rejections on appeal, appellants indicate (main brief, page 5) that claims 1 through 3 stand or fall together, claims 5 and 6 stand or fall together, and claims 7 through 9 stand or fall together.

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OPINION

In reaching our conclusion on the issues raised in this appeal, this panel of the Board has carefully considered appellants' specification and claims, the applied teachings,<sup>3</sup> and the respective viewpoints of appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The indefiniteness rejection

We do not sustain the rejection of claim 8 under 35 U.S.C. § 112, second paragraph.

The examiner is of the view that it is unclear as to what the "two main surfaces" of claim 8 are referring to (answer, page

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<sup>3</sup> In our evaluation of the applied prior art, we have considered all of the disclosure of each document for what it would have fairly taught one of ordinary skill in the art. See In re Boe, 355 F.2d 961, 965, 148 USPQ 507, 510 (CCPA 1966). Additionally, this panel of the board has taken into account not only the specific teachings, but also the inferences which one skilled in the art would reasonably have been expected to draw from the disclosure. See In re Preda, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

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11), while appellants rely upon the underlying specification for an understanding that the two main surfaces clearly denote both sides, i.e., the top side and the underside, of the printed circuit board (main answer, pages 20 and 21).

We share appellants' point of view that the language at issue would be fairly well comprehended, as explained by appellants, when read in light of the underlying specification. It is for this reason that the rejection of claim 8 will not be sustained.

#### The anticipation rejection

We sustain the rejection of claim 1 under 35 U.S.C. § 102(b) as being anticipated by Hargis. It follows that we likewise sustain the rejection of claims 2 and 3 on this same ground since as earlier indicated they stand or fall with claim 1.

Claim 1 is drawn to a method for manufacturing a printed circuit board ("PCB") comprising; inter alia, (a) providing the PCB, with the PCB having at least one electronic component

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disposed on a main area and having at least one test point disposed on an auxiliary area, (b) testing the PCB, and (c) removing the auxiliary area.

As determined by the examiner (answer, page 4), the Hargis reference discloses manufacturing a printed circuit board inclusive of the method steps of appellants' claim 1. On the other hand, appellants point out that claim 1 addresses a printed circuit board and argue that Hargis does not pertain to printed circuit boards or their manufacture and does not teach removal after testing (main brief, pages 6 through 10).

As we see it, one skilled in the art would view the arrays (of individual packaging substrates) in the testing procedure of Hargis, using any desired fired or unfired substrate for ceramic packages or parts with a metallized pattern of internal and external terminals, metallized traces, and electrical contact pad thereon (column 3, lines 19 through 68), as denoting the broadly recited manufacture of a "printed circuit board" as in appellants' claim 1. Further, it is quite apparent to us that one versed in the art would assess from the overall teaching of Hargis that the separable (snap apart) individual electronic

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packaging substrates (chip carriers) in a main area (to be tested) would be selectively removable relative to the array and an auxiliary area (location of pads). Based upon the above, we share the examiner's view that the method of claim 1 is anticipated by the Hargis patent.

As explained, supra, and contrary to the argument advanced by appellants, we determined that the Hargis patent would be understood by those versed in the art as addressing the broadly set forth printed circuit board of claim 1. In the reply brief (pages 1 and 2), appellants relate the numerous occurrences of the term "printed circuit board" or "PCB" in the application, and refer us to extrinsic evidence of record as to what was intended by the latter term at the time of the filing of the application. As pointed out by appellant (reply brief, page 1), there is no requirement that a specification contain definitions of terms. However, as in the present case, the lack of a specific definition in the specification of the term at issue allows a broadest reasonable interpretation to be attributed thereto. On that basis, we consider it both fair and reasonable to comprehend the individual electronic packaging substrates of Hargis as printed circuit boards.

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The obviousness rejections

We sustain the rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Beers.

In our opinion, a combined assessment of the Hargis and Beers (known practice of repairing) teachings would have suggested to one having ordinary skill in the art a repairing step, incident to or as a function of testing, and prior to removal of an electronic packaging substrate, in the method of Hargis. In our opinion, one having ordinary skill in this art would have reasonably been expected to repair a detected problem prior to removal to assure that the repaired component subsequently tests out as functional. Our assessment in this matter presumes skill on the part of those practicing this art, rather than the converse. See In re Sovish, 769 F.2d 738, 743, 226 USPQ 771, 774 (Fed. Cir. 1985). Thus, we support the examiner's rationale in rejecting claim 4 as being obvious.

Contrary to the view of appellants (main brief, pages 10 through 14), and as explained earlier in this opinion, Hargis teaches what would be recognized as a printed circuit board and,

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accordingly, is highly relevant prior art with respect to the claimed invention. While appellants focus upon the lack of a teaching of repair in the Hargis patent and perceived deficiencies in the Beers disclosure, like the examiner, our conclusion is based upon what the combined teachings of the applied prior art would have suggested to one having ordinary skill in this particular art. From that perspective, it is clear that the subject matter of claim 4 would have been obvious and, thus, the rejection thereof is sound.

We do not sustain the rejection of claims 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Sarma.

In our opinion, one having ordinary skill in the art would not have perceived any suggestion from the combined teachings of Hargis and Sarma to seal any edge of a removed electronic packaging substrate when practicing the invention of Hargis. Simply stated, Hargis gives no indication of any concern for the severed edges of the removed electronic packaging substrate, and Sarma's application of sealing is remote with respect to the Hargis teaching.

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We do not sustain the rejection of claims 7 through 9 under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Beers.

Method claim 7 expressly requires, inter alia, providing a PCB having a PCMCIA area and auxiliary area with a plurality of test points, populating the PCMCIA area having a plurality of locations with a plurality of electronic components, testing the PCMCIA area, and separating the auxiliary area from the PCMCIA area after satisfactory testing. This claim is not identical to claim 1, contrary to the examiner's view (answer, page 10).

At the outset, it is important to recognize that PCMCIA circuit cards, as disclosed by appellants (specification, pages 1 through 5), use small, densely populated PCBs. Thus, a PCMCIA PCB has a specific identifiable meaning, as particularly addressed in the underlying disclosure.

Turning now to the collective disclosures of Hargis and Beers, it is at once apparent to us that these documents do not teach and would not have been suggestive of a method addressing a

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PCMCIA PCB as now claimed. Thus, the rejection of claims 7 through 9 cannot be sustained.

In summary, this panel of the board has:

not sustained the rejection of claim 8 under 35 U.S.C. § 112, second paragraph, as being indefinite;

sustained the rejection of claims 1 through 3 under 35 U.S.C. § 102(b) as being anticipated by Hargis;

sustained the rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Beers;

not sustained the rejection of claims 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Sarma; and

not sustained the rejection of claims 7 through 9 under 35 U.S.C. § 103(a) as being unpatentable over Hargis in view of Beers.

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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

IRWIN CHARLES COHEN	)	
Administrative Patent Judge	)	
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	)	
	)	
	)	BOARD OF PATENT
LAWRENCE J. STAAB	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
	)	
	)	
	)	
LEE E. BARRETT	)	
Administrative Patent Judge	)	

ICC/lbg

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