

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.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

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JAMES E. JOHNSON and RONALD J. DARCY

Appeal No. 2001-2681
Application No. 09/167,295

ON BRIEF

Before THOMAS, HAIRSTON, and LEVY, Administrative Patent Judges.
HAIRSTON, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims
1 through 21.

The disclosed invention relates to the removal of heat
generated during the testing of an integrated circuit.

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

1. A socket for testing an integrated circuit, comprising:

a socket base capable of supporting a DUT carrying the integrated circuit, said socket base including electrical leads configured to connect to corresponding leads on the DUT;

a socket lid;

a thermally conductive heat spreader resiliently mounted within said socket lid, said heat spreader including a first thermal interface in releasable mechanical and thermal contact with the DUT in the socket; and

a heat sink in thermal contact with a cooling medium and defining a second thermal interface with said heat spreader.

The references relied on by the examiner are:

Spaight	4,092,697	May 30, 1978
Flatley et al. (Flatley)	4,839,587	Jun. 13, 1989
Friedman	4,887,147	Dec. 12, 1989
Chao et al. (Chao)	5,412,535	May 2, 1995
Ikeya et al. (Ikeya)	5,807,104	Sep. 15, 1998
		(filed Jan. 26, 1996)
Grunfeld	5,847,366	Dec. 8, 1998
		(filed Jun. 18, 1996)

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ikeya or in the alternative under 35 U.S.C. § 103(a) as being unpatentable over Ikeya.

Claims 3, 7, 9 through 14 and 19 through 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeya in view of Flatley and Friedman.

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Claims 4 through 6 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeya in view of Spaight.

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeya in view of Chao.

Claim 15 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeya in view of Flatley, Friedman and Grunfeld.

Claims 16 through 18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ikeya in view of Flatley, Friedman and Spaight.

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 anticipation rejection of claims 1 and 2, and the obviousness rejection of claims 1, 2, 8, 15 and 19 through 21. On the other hand, we will reverse the obviousness rejection of claims 3 through 7, 9 through 14 and 16 through 18.

Turning first to the anticipation rejection of claim 1, appellants and the examiner disagree as to whether Ikeya has a

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"second thermal interface" as set forth in claim 1. Appellants argue (brief, page 7) that in Ikeya "there can be no 'interface' because there are not two bodies, as that term implies." The examiner contends (answer, page 5) that Ikeya discloses (Figure 2) a compressive holding pad 60 with an integral heat sink (i.e., heat-discharge fins 60b) and heat spreader (i.e., plate holding part 60a). The examiner explains (answer, pages 12 through 20) that the term "interface" when broadly defined does not necessarily require two separate bodies but could be a thermal "interface" separating different temperature regions in holding pad 60. We agree with the examiner's reasoning that the term "interface" does not necessarily require two different bodies. Nothing in claim 1 on appeal precludes the reading of a "second thermal interface" on different thermal regions that reside in the unitary holding pad 60. Thus, the anticipation rejection of claim 1 is sustained because Ikeya "discloses, expressly or under principles of inherency, each and every element" of the claimed invention. RCA Corp. v. Applied Digital Data Sys., Inc., 730 F.2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir.), cert. dismissed, 468 U.S. 1228 (1984). The anticipation rejection of claim 2 is sustained because appellants have chosen (brief, page 5) to let this claim stand or fall with claim 1.

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Turning next to the obviousness rejection of claims 1 and 2 based upon the teachings of Ikeya, we will sustain this rejection because anticipation is the epitome of obviousness. In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982).

Based upon appellants' grouping of the claims (brief, page 5), the obviousness rejection of claims 8 and 15 is sustained because appellants have chosen to let these claims stand or fall with commonly rejected claims 1 and 2. In re McDaniel, 293 F.3d 1379, 1383, 63 USPQ2d 1462, 1465 (Fed. Cir. 2002).

Turning next to claims 19 through 21, we agree with the examiner (answer, pages 8 and 9) that these claims are method equivalents to claims 1 and 2. Appellants' argument (brief, page 12) to the contrary notwithstanding, the compressive holding pad 60 in Ikeya is "resiliently mounted" in cover 12 to conform to the shape of the device under test (DUT), and the compressive holding pad 60 is urged in the direction of the (DUT) by the closed cover 12 and the compressive coil spring 28. Accordingly, the obviousness rejection of claims 19 through 21 is sustained.

The obviousness rejection of claim 3 is reversed because the examiner has not provided any evidence or a convincing line of

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reasoning (answer, pages 6 and 7) for making the unitary heat sink and heat spreader in Ikeya in two separate pieces so that a spring may be affixed between them as claimed.

The obviousness rejection of claims 4 through 7 is reversed because the examiner has not provided any evidence or a convincing line of reasoning (answer, pages 7 and 9) for placing anything at the thermal interface in the unitary heat sink and heat spreader in Ikeya.

The obviousness rejection of claim 9 is reversed because the examiner has not provided any evidence or a convincing line of reasoning (answer, page 7 and 8) for placing biasing means at the second interface in Ikeya.

The obviousness rejections of claims 10 through 14 and 16 through 18 are reversed because of lack of evidence in the record or convincing lines of reasoning for making the suggested modifications to Ikeya.

DECISION

The decision of the examiner rejecting claims 1 and 2 under 35 U.S.C. § 102(e) is affirmed, and the decision of the examiner rejecting claims 1 through 21 under 35 U.S.C. § 103(a) is

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affirmed as to claims 1, 2, 8, 15 and 19 through 21, and is reversed as to claims 3 through 7, 9 through 14 and 16 through 18. Accordingly, the decision of the examiner is affirmed-in-part.

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

JAMES D. THOMAS)	
Administrative Patent Judge)	
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KENNETH W. HAIRSTON)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS AND
)	INTERFERENCES
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STUART S. LEVY)	
Administrative Patent Judge)	

KWH:hh

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MARCELLA D. WATKINS
CONLEY ROSE AND TAYON
P.O. BOX 3267
HOUSTON, TX 77253-3267