

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHARLES ANTHONY ODEGARD

Appeal No. 2006-0497
Application No. 10/444,772

ON BRIEF

Before RUGGIERO, LEVY, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-9.

We reverse.

BACKGROUND

The invention is directed to a system and method to increase die stand-off height in a flip chip. Claim 1 is reproduced below.

1. A system for increasing die stand-off height in a flip chip, comprising:
 - a die;
 - a substrate positioned generally parallel with, and spaced apart from, the die;
 - a plurality of separator pedestals disposed between a first face of the die and a second face of the substrate;
 - the first face being opposite the second face; and
 - the plurality of separator pedestals being operable to selectively force the die and substrate apart.

The examiner relies on the following references:

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| Dockerty et al. (Dockerty) | 6,053,394 | Apr. 25, 2000 |
| Earnworth et al. (Earnworth) | US 6,649,444 B2 | Nov. 18, 2003 (filed Oct. 24, 2001) |

Claims 1-6, 8, and 9 stand rejected under 35 U.S.C. § 102 as being anticipated by Earnworth.

Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over Earnworth and Dockerty.

Claims 10-27 have been withdrawn from consideration.

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We refer to the Final Rejection (mailed Aug. 2, 2004) and the Examiner's Answer (mailed Apr. 8, 2005) for a statement of the examiner's position and to the Brief (filed Feb. 9, 2005) for appellant's position with respect to the claims which stand rejected.

OPINION

Appellant argues that the rejection of instant claim 1, the sole independent claim on appeal, is in error because separator pedestals (spacers) 50 of Earnworth are not "operable to selectively force the die and substrate apart." In the examiner's view, Earnworth clearly discloses that the plurality of spacers 50 operate to separate die 10 and substrate 20 apart, referring to column 10, lines 15 through 25. Further, Earnworth teaches that the spacers prevent the die tilting or tipping in contact with the substrate, as shown in prior art Figures 2 through 7 of the reference. Since spacers 50 are inserted between the die and substrate to prevent the tipping, since the spacers maintain a substantially uniform distance between the die and substrate, and since the die asserts an amount of weight on the spacers, the spacers are deemed to be operable to selectively force the die and substrate apart. (Answer at 6.)

Claims are to be given their broadest reasonable interpretation during prosecution, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550-51 (CCPA 1969). "An

essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process.” In re Zletz, F.2d 893 at 321, 13 USPQ2d at 1322.

While we commend the examiner to the extent the rejection is based on an expansive reading of the claims, in this case we must agree with appellant that the claims avoid the prior art that is applied.

Earnworth teaches that spacers 50 are sized and configured to spread any compressive forces applied to semiconductor device 10 or substrate 20, to have sufficient strength and rigidity to maintain a substantially uniform minimum distance between the device and substrate during bonding, and to prevent tipping or tilting of device 10 relative to substrate 20 (e.g., col. 10, ll. 1-31). The reference provides, in column 11, examples of suitable materials that may constitute the spacers. The rejection does not point out, and we do not find, where Earnworth discloses or suggests that the spacers are operable to selectively force the die and substrate apart.

As a concrete example of the scope of the claims, we refer to Figures 1A and 1B of the instant disclosure. Instant claim 1 reads on the flip chip assembly of Figure 1A. The claim does not read on the flip chip assembly of Figure 1B, because -- subsequent to the disclosed process -- separator pedestals 17 are not (i.e., no longer) operable to selectively force the die and substrate apart. There is structural similarity between the

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assembly of instant Figure 1B and that of the reference applied against claim 1, but we agree with appellant that the claim distinguishes over the assembly of the reference.

As the Dockerty reference does not remedy the deficiencies of Earnworth, we sustain neither of the rejections on appeal.

CONCLUSION

The rejection of claims 1-6, 8, and 9 under 35 U.S.C. § 102 as being anticipated by Earnworth and the rejection of claim 7 under 35 U.S.C. § 103 as being unpatentable over Earnworth and Dockerty are reversed.

REVERSED

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| JOSEPH F. RUGGIERO |) | |
| Administrative Patent Judge |) | |
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| |) | BOARD OF PATENT |
| STUART S. LEVY |) | APPEALS |
| Administrative Patent Judge |) | AND |
| |) | INTERFERENCES |
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| HOWARD B. BLANKENSHIP |) | |
| Administrative Patent Judge |) | |

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