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JERRY.SHORMA@HP.COM
ipa.mail@hp.com
laura.m.clark@hp.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JENNIFER SHIH, VALERIE J. MARTY, JAMES PRZYBYIA,
ARTHUR PIEHL, JOHN L. WILLIAMS, and CHRISTOPHER LEONARD

Appeal 2009-013101
Application 10/703,762
Technology Center 2800

Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and
BRADLEY W. BAUMEISTER, *Administrative Patent Judges*.

RUGGIERO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134(a) from the Final Rejection of claims 1, 3-6, 11-14, 16-19, 24-26, 28-31, and 36-38. Claims 49-56 and 58 have been canceled, and claims 57 and 59-64 have been allowed. Claims 2, 7-10, 15, 20-23, 27, 32-35, and 39-48 have been indicated by the

Examiner to be allowable, but are objected to as being dependent on rejected claims. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

Rather than reiterate the arguments of Appellants and the Examiner, reference is made to the Appeal Brief (filed Jan. 14, 2009), the Answer (mailed Apr. 6, 2009), and the Reply Brief (filed June 5, 2009). Only those arguments actually made by Appellants have been considered in this decision. Arguments which Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived (*see* 37 C.F.R. § 41.37(c)(1)(vii)).

Appellants' Invention

Appellants' invention relates to a method of sealing a micro-electromechanical system (MEMS) including depositing and etching a sealing material to seal an opening in the MEMS. *See generally* Spec. ¶ [0012]-[0013].

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

1. A method of sealing a micro-electromechanical system (MEMS), said method comprising successively depositing and etching a sealing material to seal an opening in said MEMS.

The Examiner's Rejections

The Examiner relies on the following prior art references to show unpatentability:

Yokoyama

US 6,099,598

Aug. 8, 2000

Appeal 2009-013101
Application 10/703,762

Colgan	US 6,323,834 B1	Nov. 27, 2001
Onose	US 2002/0157475 A1	Oct. 31, 2002
Carley	US 7,008,812 B1	Mar. 7, 2006 (filed May 30, 2000)

Claims 1, 3, 5, 11-14, 16, 18, 24, and 25 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Carley.

Claims 4, 6, 17, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carley in view of Onose.

Claims 26, 28, 30, and 36 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carley in view of Yokoyama.

Claims 29 and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carley in view of Yokoyama and Onose.

Claims 37 and 38 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Carley in view of Colgan.

ANALYSIS

35 U.S.C. § 102(e) REJECTION

Appellants argue with respect to independent claims 1 and 13 that Carley does not disclose the successive steps of depositing and etching to seal an opening in the MEMS. According to Appellants (App. Br. 9-11; Reply Br. 4-6), Carley discloses that a seal layer 26 is applied to seal the holes 20 in an MEMS structure *without* any etching step (col. 5, ll. 21-22). Appellants further contend that, while Carley does perform an etching step following the deposition of seal layer 26, this etching step is performed to expose contact pad 6, not to seal an opening in the MEMS structure.

We find Appellants' arguments unpersuasive of any error in the Examiner's stated position (Ans. 4). We agree with the Examiner (Ans. 10-

11) that the end result of the sealing and etching steps performed by Carley is the sealing of the opening 20 in the MEMS structure as claimed. The etching step performed by Carley removes unwanted sealing material which comports with the purpose of the etching step described by Appellants at paragraph [0025] of the Specification. In other words, both Appellants and Carley disclose a sealing process which includes an etching step to remove unwanted sealing material.

In view of the above discussion, we find that the Examiner did not err in concluding that all of the limitations of independent claims 1 and 13 are present in the disclosure of Carley. Accordingly, the Examiner's 35 U.S.C. § 102(e) rejection of independent claims 1 and 13, as well as dependent claims 3, 5, 11, 12, 14, 16, 18, 24, and 25 not separately argued by Appellants, is sustained.

35 U.S.C. § 103(a) REJECTIONS

Claims 26, 28, 30, and 36

The Examiner's obviousness rejection of claims 26, 28, 30, and 36 based on the combination of Carley and Yokoyama is sustained as well. Appellants' arguments have mischaracterized the Examiner's position as relying on the principle of inherency in suggesting that Yokoyama discloses the claimed MEMS fabrication and packaging in the same fabrication facility.

It is apparent from the Examiner's stated position that it is Carley, not Yokoyama, that is relied upon for a teaching of fabricating a MEMS structure and packaging the MEMS structure by depositing material to seal openings in the MEMS structure (Ans. 6-7). The Examiner relies upon

Yokoyama to address Carley's deficiency in explicitly disclosing that the MEMS structure fabrication and the sealing packaging operations are performed at the same fabrication facility.

As correctly interpreted by the Examiner (Ans. 7, 11, and 12), Yokoyama teaches that various steps such as metal and insulator deposition, lithography, and metal and insulator etching, i.e., all of the operations that Carley discloses in fabricating and packaging the MEMS structure, are performed at a same fabrication facility. As explained by the Examiner, Yokoyama's disclosure (that the various apparatuses 102-107 performing the deposition, lithography, and sealing operations are connected to each other by a conveyor belt transporter 101) provides convincing evidence that all of the operations are performed at the same fabrication facility. We agree with the Examiner (Ans. 7) that an ordinarily skilled artisan would have recognized and appreciated that Yokoyama's teaching of performing all of the processing steps involved in MEMS structure fabrication, such as taught by Carley, in the same fabrication facility would have served as an obvious enhancement to the MEMS fabrication and packaging procedure taught by Carley.

Claims 4, 6, 17, 19, 29, 31, 37, and 38

We also sustain the Examiner's obviousness rejections (Ans. 28) of claims 4, 6, 17, 19, 29, 31, 37, and 38, in which the Carley reference is applied in various separate combinations with Onose, Yokoyama, and Colgan. Appellants rely (App. Br. 12, 14, and 15; Reply Br. 7, 10, and 11) on those arguments made with respect to the sealing and etching feature asserted against the anticipation rejection of independent claims 1 and 13, which arguments we found unpersuasive as discussed *supra*.

CONCLUSION

Based on the analysis above, we conclude that the Examiner did not err in rejecting claims 1, 3, 5, 11-14, 16, 18, 24, and 25 for anticipation under 35 U.S.C. § 102(e), and rejecting claims 4, 6, 17, 19, 26, 28-31, and 36-38 for obviousness under 35 U.S.C. § 103(a).

DECISION

The Examiner's decision rejecting claims 1, 3-6, 11-14, 16-19, 24-26, 28-31, and 36-38 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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