

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CHIEN-HUA CHEN,
TROY D. SCHWINABART, and DAVID M. CRAIG

Appeal 2008-6200
Application 11/011,426
Technology Center 2800

Decided: January 09, 2009

Before ADRIENE LEPIANE HANLON, PETER F. KRATZ, and
JEFFREY T. SMITH, *Administrative Patent Judges*.

HANLON, *Administrative Patent Judge*.

DECISION ON APPEAL

A. STATEMENT OF THE CASE

This is an appeal under 35 U.S.C. § 134 from an Examiner's final rejection of claims 12-27, all of the claims pending in the application. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

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The following Examiner's rejection is before us for review:

Claims 12-27 are rejected under 35 U.S.C. § 102(e) as anticipated by Enquist.¹

Claim 12, the only independent claim on appeal, is representative of the subject matter on appeal and reads as follows:

12. A process of plasma bonding an electronic component package, comprising:

activating an electronic component container sealing surface and a lid sealing surface with a nitrogen plasma; and

contacting the electronic component container sealing surface and the lid sealing surface to form a hermetic seal.

App. Br. 13, Claims Appendix.²

B. ISSUE

Does Enquist describe a plasma bonding process that uses a nitrogen plasma as recited in claim 12?

C. FINDINGS OF FACT

The following findings of fact are supported by a preponderance of the evidence. Additional findings of fact as necessary appear in the Analysis portion of the opinion.

Enquist

Enquist discloses a method for encapsulating an electronic device. Enquist 2:53-55.

¹ US 6,822,326 B2 issued to Enquist et al. on November 23, 2004.

² Appeal Brief dated August 2, 2007.

As shown in Figure 3A, the bottom surface of cover **10** and the surface of carrier **4** are brought into direct contact and bonded to form a hermetic seal. Enquist 8:1-6.

Enquist discloses that the surfaces are preferably activated to enhance bonding. The activation process can include a very slight wet or dry chemical (i.e. plasma) etch. Enquist 10:23-26.

The very slight etch (VSE) process can consist of a gas or mixed gas (such as oxygen, argon, nitrogen, CF₄, NH₃) plasma process. The plasma process may be conducted in different modes of plasma operation. Both reactive ion etch and plasma modes such as an inductively-coupled plasma mode can be used. Plasma sputtering can also be used. Enquist 12:37-43.

D. PRINCIPLES OF LAW

“To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently.” *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997).

E. ANALYSIS

The Examiner found that Enquist discloses:

A process of plasma bonding an electronic component package, comprising: activating an electronic component container sealing surface (Fig. 10A, ref. 90) and a lid sealing surface (Fig. 10A, ref. 95) with a nitrogen plasma (Col. 10, lines 23-42)^[3]; and contacting the electronic component container sealing surface and the lid sealing surface to form a hermetic seal (Col. 19, lines 20-21 & 36-38).

³ At column 10, lines 30-32, Enquist discloses that “[t]he activation process can include exposing the prepared surfaces to one of an oxygen, argon, NH₃ and CF₄ plasma process.”

Ans. 3.⁴

The Appellants argue that Enquist does not disclose “a nitrogen plasma” as recited in claim 12. Rather, referring to column 10, lines 30-32 of Enquist, the Appellants argue that Enquist discloses “an ammonia (NH₃) plasma,” and ammonia (NH₃) and nitrogen are not the same chemical species. App. Br. 11; Reply Br. 10⁵. The Appellants do not otherwise point to any error in the Examiner’s findings.

We find that Enquist describes “a nitrogen plasma” within the scope of claim 12. In particular, Enquist discloses that the prepared surfaces of an electronic device carrier are preferably activated to enhance bonding. Enquist 10:23-24; Fig. 4. Enquist discloses:

The activation process can include a very slight wet or dry chemical (i.e. plasma) etch, to be discussed in more detail below.

Enquist 10:23-26.

Enquist discloses that a limited number of plasma gases are used in the very slight etch process. According to Enquist:

The VSE [very slight etch] process can consist of a gas or mixed gas (such as oxygen, argon, *nitrogen*, CF₄, NH₃) plasma process at a specified power level for a specified time.
[Emphasis added.]

Enquist 12:37-39.

Thus, based on the record before us, we find that Enquist expressly discloses using a nitrogen plasma to activate the sealing surfaces of a container or device carrier as recited in claim 12. *Cf. In re Hedges*, 783 F.2d

⁴ Examiner’s Answer dated January 29, 2008.

⁵ Reply Brief dated April 1, 2008.

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1038, 1039 (Fed. Cir. 1986) (Solicitor should not be constrained from pointing to other portions of a reference in contravention of Appellant's position).

F. DECISION

The rejection of claims 12-27 under 35 U.S.C. § 102(e) as anticipated by Enquist is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 35 U.S.C. § 1.136(a) (2008).

AFFIRMED

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