



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/143,029	06/20/2008	SOHICHI KADOGUCHI	TI-37425A	8536
23494	7590	02/05/2013	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED			CAO, PHAT X	
P O BOX 655474, M/S 3999			ART UNIT	PAPER NUMBER
DALLAS, TX 75265			2814	
			NOTIFICATION DATE	DELIVERY MODE
			02/05/2013	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

uspto@ti.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SOHICHI KADOGUCHI and NORIHIRO KAWAKAMI

Appeal 2010-010708
Application 12/143,029
Technology Center 2800

Before CARL W. WHITEHEAD, JR., ERIC S. FRAHM and
ANDREW J. DILLON, *Administrative Patent Judges*.

WHITEHEAD, JR., *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants are appealing claim 1.¹ Appeal Brief 2. We have jurisdiction under 35 U.S.C. § 6(b) (2012).

We affirm.

Introduction

The present invention is directed to a semiconductor device having metal bonds to contact pads over dielectrics. Specification 1.

Illustrative Claim

1. A semiconductor device comprising:

a semiconductor chip having a metallic bond pad over insulator material;

a flattened metallic free air ball having a first center line in contact with the bond pad; and

a contact ball at an end of a wire having a second center line misaligned to the first center line affixed on the flattened metallic free air ball.

¹ Claims 1-9 are currently pending however claims 2-9 are not under this appeal. Appeal Brief 2. Therefore only the obviousness rejections of claim 1 are addressed. Further, the 35 U.S.C. § 112, first and second paragraph, rejections upon claim 9 will not be addressed since the Appellants have chosen not to appeal claim 9.

Rejections on Appeal

Claim 1 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Bojkov (U.S. Patent Application Publication 2005/0073048 A1; published April 7, 2005) and Nakatani (U.S. Patent Application Publication 2005/0093150 A1; published May 5, 2005).
Answer 4-6.

Claim 1 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Tong (U.S. Patent Application Publication 2003/0189249 A1; published October 9, 2003) and Nakatani. Answer 6-8.

Issue on Appeal

Do Bojkov and Nakatani, or Tong and Nakatani, either together or in combination, disclose a semiconductor device having a flattened metallic free air ball in contact with a bond pad as described in claim 1?

ANALYSIS

We have reviewed the Examiner's rejections in light of Appellants' arguments that the Examiner has erred. We disagree with Appellants' conclusions. We concur with the findings and reasons set forth by the Examiner in the action from which this appeal is taken and the reasons set forth by the Examiner in the Answer in response to Appellants' Appeal Brief. However, we highlight and address specific findings and arguments for emphasis as follows.

Appellants argue that Bojkov teaches a metal layer that is either deposited by electrolytic or electroless plating and therefore Bojkov does not teach a flattened metallic free air ball. Appeal Brief 3. Appellants agree

with the Examiner that claim 1 does not include “a process of forming the flattened metallic free air ball because claim 1 does not claim the process.” Appeal Brief 4. “However, it is factual that claim 1 is direct [sic] to a product that includes a flattened metallic free ball; and neither the Bojkov reference nor the Tong reference teaches a product that has this element - no matter how it is actually made.” *Id.*

Appellants rely upon a holding from *Playtex v. P.G.*, 400 F.3d 901, 908 (Fed. Cir. 2005), wherein the Court held that, “[t]he disputed claim term [flatten] is clearly a comparative term. Comparison requires a reference point. Therefore, to flatten something, one must flatten it with respect to either itself or some other object.”

However, the Court in *Playtex* also stated that, “[t]he issue is whether the patentee properly claimed an oval as a ‘substantially flattened’ circle, or more specifically, an elliptical cylinder as a ‘substantially flattened’ cylinder.” *Playtex v. P.G.*, 400 F.3d 901, 909 (Fed. Cir. 2005). We are faced with a similar issue here and that is, did Appellants properly claim the “flatten metallic free air ball” in a manner that would distinguish it from a product by process based claim. We find that Appellants did not.

Appellants contend, “[r]egardless whether one flattens the metallic free ball from its original shape, in this context, one must flatten it with respect to an earlier state. Therefore, Examiner Cao argument that flattened free air ball does not require a comparison must fail.” Appeal Brief 5. We do find Appellants’ arguments to be persuasive because Appellants are requiring us to give consideration to the flattening process of forming the metallic free air ball and we find that the manner in which the metallic free air ball is flattened is not relevant to the novelty of the structure. *See*

Manual of Patent Examining Procedure (MPEP) § 2113 (*citing In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985) (citations omitted) (“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of the product does not depend on its method of production.”)). Bojkov discloses a metallic free air ball 301/501/502 in Figure 6A having a flat surface (Answer 5; Appeal Brief 5), the process in which the claimed metallic free air ball obtained the flat surface is not patentably distinguishable over Bojkov. *See* MPEP §2113. Therefore we sustain the Examiner’s obviousness rejection of claim 1 in view of Bojkov and Nakatani. Having reached a decision on the merits in regard to claim 1, we will not address the merits of the obviousness rejection of claim 1 in view of Tong and Nakatani.

DECISION

The obviousness rejection of claim 1 under 35 U.S.C. § 103(a) as being unpatentable over Bojkov and Nakatani 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). *See* 37 C.F.R. § 41.50(f).

AFFIRMED