

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

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* LARRY D. KINSMAN, JERRY M. BROOKS,  
WARREN M. FARNWORTH, WALTER L. MODEN, and  
TERRY R. LEE

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Appeal 2006-3357  
Application 10/310,311  
Technology Center 2800

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Decided: June 15, 2007

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Before TERRY J. OWENS, JENNIFER D. BAHR, and  
STUART S. LEVY, *Administrative Patent Judges*.

BAHR, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Larry D. Kinsman et al. (Appellants) appeal under 35 U.S.C. § 134 from the Examiner's decision rejecting claims 1-20, the only pending claims. We have jurisdiction over this appeal under 35 U.S.C. § 6 (2002).

Appellants' claimed invention is directed to a system for securing a semiconductor device in nonparallel relation to a carrier substrate.

Independent claim 1 is representative of the claimed invention and reads as follows:

1. A system for securing at least one semiconductor device in nonparallel relation to a carrier substrate, comprising:

at least one interconnection receptacle associated with the carrier substrate for receiving at least an edge portion of the at least one semiconductor device; and

a mounting element, including:

at least one assembly member configured to couple to the at least one semiconductor device; and

at least one retaining member configured to engage or be engaged by a complementary engager upon insertion of at least the edge portion of the at least one semiconductor device into the at least one interconnection receptacle.

The Examiner relies upon the following as evidence of unpatentability:

Bellomo	US 5,449,297	Sep. 12, 1995
Richards	US 6,056,579	May 02, 2000

Appellants seek review of the Examiner's rejection of claims 1-20 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as unpatentable over Bellomo alone or taken in view of Richards.

The Examiner provides reasoning in support of the rejection in the Answer (mailed June 28, 2005). Appellants present opposing arguments in

the Appeal Brief (filed March 25, 2005) and Reply Brief (filed August 29, 2005).

### THE ISSUES

Appellants have argued the patentability of claims 1-20 together as a single group. Therefore, in accordance with 37 C.F.R. § 41.37(c)(1)(vii), we focus our attention on claim 1, with claims 2-20 standing or falling therewith. The Examiner offers alternative explanations as to why the subject matter of claim 1 is unpatentable over Bellomo (Answer 4-5).

The Examiner's first position (Answer 4) is that the module 36 together with the memory modules 38 mounted thereon correspond to the "at least one semiconductor device" referred to in claim 1 and that, in essence, Bellomo's connector portion 32 and module latching and protection mechanism 40 comprise "at least one interconnection receptacle associated with the carrier substrate for receiving at least an edge portion of the at least one semiconductor device" and "a mounting element," respectively, of a system for securing at least one semiconductor device (the module 36 with memory modules 38 thereon) in nonparallel relation to a carrier substrate (main circuit board 33), as called for in claim 1. Therefore, according to the Examiner, the subject matter of claim 1 is anticipated by Bellomo. The sole issue in dispute in the Examiner's anticipation theory is whether Bellomo's module 36, with memory modules 38 thereon, is a "semiconductor device" as that terminology is used in claim 1.

The Examiner's alternative position (Answer 4-5) is that it would have been obvious to form the Bellomo receptacle (connector portion 32) to directly receive semiconductor devices comparable to memory modules 38,

which Appellants concede are “semiconductor devices” (Appeal. Br. 5; Reply Br. 3), as this would enable a more direct connection and would shorten circuit paths. Therefore, according to the Examiner’s second position, the subject matter of claim 1 is unpatentable over Bellomo. The Examiner additionally applies the teachings of Richards (Answer 5) for details of how Bellomo’s module latching and protecting mechanism 40 would be securely attached to module 36, but this aspect of the rejection is not contested by Appellants. Accordingly, the sole issue in dispute in the Examiner’s obviousness theory is whether it would have been obvious to apply Bellomo’s edge card interconnection system (i.e., the module latching and protection mechanism 40 and connector portion 32) to the mounting of memory modules 38 on module 36.

#### FINDINGS OF FACT (FF)

1. Appellants cite a definition of “semiconductor device” as “a conductor made with semiconducting material” (Reply Br. 2, citing WordNet<sup>®</sup>).
2. Appellants concede that Bellomo’s memory modules 38 are “semiconductor devices” (Appeal Br. 5; Reply Br. 3).
3. Appellants do not specifically define “semiconductor device” in their Specification. Appellants characterize the present invention as relating to “vertically mountable semiconductor device packages” and, more specifically, to “minimally packaged semiconductor devices which are vertically attached to a carrier substrate” (Specification [0002]). Appellants refer to prior art sockets used to connect a mother board and a daughter board, such as a single-in-line

- memory module (SIMM) (Specification [0006]), but points out that “none of those devices disclose the use of a socket for removably mounting a *minimally packaged* semiconductor device to a circuit board” (emphasis added) (Specification [0007]). Accordingly, Appellants distinguish between a “minimally packaged semiconductor device” and a daughter board, which may include more than one semiconductor device permanently attached thereto, but do not distinguish between a “semiconductor device” and a daughter board.
4. Bellomo provides an edge card interconnection system having enhanced electrical interconnection between the module and a circuit board. The disclosed system minimizes electrical contact length and controls deflection of contacts, as the system is configured to eliminate the need for the contacts to absorb module thickness tolerances. Bellomo’s system further includes a latching mechanism that is easily manipulated and facilitates extraction of the module. (Bellomo, col. 2, ll. 33-42.)
  5. Bellomo’s edge card interconnection system 30 includes a connector portion 32 that is electrically engageable with a main module or circuit board 33. The connector portion 32 includes internal contacts for receiving and facilitating edge card connection with contact pads 34 disposed along an edge of a module 36 to be electrically interconnected with the main module or circuit board 33. The module 36 includes a plurality of electronic circuits such as memory modules 38. The module 36 is attached to a module latching and protection mechanism 40 by mechanical fastening means. The module latching and protection mechanism 40 includes latching arms (illustrated but

not labelled in Fig. 5) and facilitates protected manual grasping of the module 36 for insertion into and extraction from the connector portion 32. (Bellomo, col. 4, ll. 14-32.)

#### PERTINENT LEGAL PRECEDENT

It is well settled that the recitation of an intended use for an old product does not make a claim to that old product patentable. *In re Schreiber*, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997).

We determine the scope of the claims in patent applications “not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316, 75 USPQ2d 1321, 1329 (Fed. Cir. 2005) (en banc) (quoting *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004)). We must be careful not to read a particular embodiment appearing in the written description into the claim if the claim language is broader than the embodiment. *See Superguide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 875, 69 USPQ2d 1865, 1868-69 (Fed. Cir. 2004) (“Though understanding the claim language may be aided by the explanations contained in the written description, it is important not to import into a claim limitations that are not a part of the claim. For example, a particular embodiment appearing in the written description may not be read into a claim when the claim language is broader than the embodiment.”) The challenge is to interpret claims in view of the specification without unnecessarily importing limitations from the specification into the claims.

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*See E-Pass Techs., Inc. v. 3Com Corp.*, 343 F.3d 1364, 1369, 67 USPQ2d 1947, 1950 (Fed. Cir. 2003).

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, §103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

*KSR Int'l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007). We must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.  
*Id.*

When the improvement is technology-independent and a combination of elements of prior art results in a product or process that is more desirable, an implicit motivation to combine exists even absent any hint of suggestion in the references themselves. In such situations, the proper question is whether the ordinary artisan possesses knowledge and skills rendering him *capable* of combining the prior art elements. *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368, 80 USPQ2d 1641, 1651 (Fed. Cir. 2006).

## DISCUSSION

Claim 1 does not positively recite a semiconductor device. Rather, claim 1 recites a system “for securing at least one semiconductor device,”

including a receptacle “for receiving at least an edge portion of the at least one semiconductor device” and at least one assembly member “configured to couple to the at least one semiconductor device.” As such, the only references to a “semiconductor device” in claim 1 are directed to the manner in which the claimed system is intended to be used and the uses for which the recited interconnection receptacle and assembly member are configured. Bellomo’s edge card interconnection system, including connector portion 32 and module latching and protection mechanism 40 appears reasonably capable of securing a semiconductor device with the configuration of module 36. More specifically, Bellomo’s connector portion 32 appears reasonably capable of receiving at least an edge portion of such a semiconductor device and Bellomo’s module latching and protection mechanism 40, appears reasonably capable of coupling to such a semiconductor device. Thus, regardless of whether or not Bellomo’s module 36 taken in combination with memory modules 38 in fact can reasonably be considered to be a “semiconductor device,” Bellomo meets the limitations of claim 1 at issue in this appeal.

Moreover, in any event, nothing in the definition of “semiconductor device” urged by Appellants (FF 1) requires that the “semiconductor device” consist solely of semiconducting material. Further, while Appellants’ Specification distinguishes daughter boards from “minimally packaged semiconductor devices,” the Specification does not expressly distinguish between a “semiconductor device,” the language used in Appellants’ claim 1, and a daughter board or circuit board (FF 3). As conceded by Appellants (FF 2), the memory modules 38 are “semiconductor devices” and thus must be made with semiconducting material. Bellomo’s module 36 includes

memory modules 38 and thus, taken in combination with memory modules 38, is a “semiconductor device” as referred to in claim 1.

For the above reasons, we conclude that the Examiner’s position that the subject matter of claim 1 is anticipated by Bellomo is well taken.

The Examiner’s alternative position, that it would have been obvious to form the Bellomo receptacle 32 to directly receive semiconductor devices comparable to memory modules 38, which Appellants concede are “semiconductor devices,” as this would enable a more direct connection and would shorten circuit paths, is also well founded. Specifically, one of ordinary skill in the art would have readily appreciated that the advantages of the edge card interconnection system touted by Bellomo, namely, minimized contact length, control of deflection of contacts, and an easily manipulated latching mechanism, would improve the connection of the memory modules 38 to module 36 in the same way. Further, there is no indication in Bellomo, and Appellants have not provided any evidence, that such a modification would have been beyond the technical capabilities of a person of ordinary skill in the art. Accordingly, the Examiner did not err in determining that such a modification would have been obvious.

In light of the above, we conclude that the Examiner did not err in rejecting the subject matter of claim 1 as being anticipated by or, in the alternative, as being unpatentable over Bellomo, either alone or taken in combination with Richards. The rejection of claim 1, and claims 2-20 standing or falling with claim 1, is sustained.

#### SUMMARY

The decision of the Examiner to reject claims 1-20 is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED

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