UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LARRY D. KINSMAN, WALTER L. MODEN, and
WARREN M. FARNWORTH

Appeal 2008-1152
Application 11/219,214
Technology Center 2800

Decided: September 3, 2008

Before KENNETH W. HAIRSTON, MAHSHID D. SAADAT, and
CARLA M. KRIVAK, *Administrative Patent Judges*.

KRIVAK, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134 from a final rejection of claims 1-30. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

STATEMENT OF CASE

Appellants' claimed invention is directed to a method for securing vertically mountable semiconductor devices to a carrier substrate and, in particular, securing vertical surface mount package assemblies and alignment devices for biasing leads of the semiconductor device against terminals on the carrier substrate to establish and maintain electrical communication (Spec. ¶[0002]).

Independent claim 1, reproduced below, is representative of the subject matter on appeal.

> 1. A method for securing a semiconductor device to a carrier substrate, comprising:
>
> inserting a semiconductor device including a bottom edge and a plurality of stub contacts extending therefrom into at least one receptacle of an alignment device associated with the carrier substrate such that the semiconductor device is oriented nonparallel to the carrier substrate; and
>
> biasing the semiconductor device toward the carrier substrate.

REFERENCE

Hileman	US 5,734,551	Mar. 31, 1998

Claims 1-30 stand rejected under 35 U.S.C. § 102(b) based upon the teachings of Hileman.

Appellants contend that the computer chassis cover disclosed in Hileman does not anticipate, either expressly or inherently, each and every claim element of claims 1-30 (Br. 6).

ISSUE

Did the Examiner err in rejecting claims 1-30 under 35 U.S.C. § 102(b) as anticipated by Hileman?

FINDINGS OF FACT

1. Appellants' invention is a method for securing a semiconductor device to a carrier substrate. The method includes inserting a semiconductor device having a bottom edge and stub contacts extending therefrom into a receptacle of an alignment device associated with the carrier substrate and biasing the semiconductor device toward the substrate carrier (cl. 1). The stub contacts extend from the semiconductor mountable device at a length of 1 mm or ½ mm or less, and preferably 10 mils or less to reduce the amount of impedance that is generated thereby and increase the overall speed of the device (Spec. ¶[0028]).

2. Hileman teaches a computer chassis that pushes an electronic card (single-in-line memory module (SIMM)) into a motherboard (Abstract). To install the card, it is initially partially plugged into a connector mounted to the motherboard. When a cover is closed, the card is pushed into a fully mated position on the motherboard. (Abstract)

3. Hileman also teaches that along one edge of a printed circuit board that contains the SIMMs are a plurality of contact pads "that can be inserted into an electrical connector." (Col. 1, ll. 22-27).

4. The attachability and detachability of the SIMM cards in Hileman allow a user to readily add, replace and subtract memory from the computer (col. 2, ll. 43-45).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 102, a single prior art reference that discloses, either expressly or inherently, each limitation of a claim invalidates that claim by anticipation. *Perricone v. Medicis Pharmaceutical Corp.*, 432 F.3d 1368, 1375-76 (Fed. Cir. 2005), citing *Minn. Mining & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 1565 (Fed. Cir. 1992). "Anticipation of a patent claim requires a finding that the claim at issue 'reads on' a prior art reference." *Atlas Powder Co. v. IRECO, Inc.*, 190 F.3d 1342, 1346 (Fed. Cir. 1999)

It is well settled that if a prior art device inherently possesses the capability of functioning in the manner claimed; anticipation exists regardless of whether there was recognition that it could be used to perform the claimed function. *See, e.g., In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997). *See also LaBounty Mfg. v. U.S. Int'l Trade Comm'n,* 958 F.2d 1066, 1075 (Fed. Cir. 1992) (in quoting with approval from *Dwight & Lloyd Sintering Co. v. Greenawalt*, 27 F.2d 823, 828 (2d Cir. 1928)):

> The use for which the [anticipatory] apparatus was intended is irrelevant, if it could be employed without change for the purposes of the patent; the statute authorizes the patenting of machines, not of their uses. [Alteration in original.]

Id. at 1075.

While all elements of the claimed invention must appear in a single reference, additional references may be used to interpret the anticipating reference and to shed light on its meaning, particularly to those skilled in the art at the relevant time. *See Studiengesellschaft Kohle m.b.H. v. Dart Indus., Inc*., 726 F.2d 724, 726-27 (Fed. Cir. 1984).

ANALYSIS

The Examiner contends claims 1-30 are anticipated by Hileman. We address this rejection with respect to representative claim 1.[1] Specifically, the Examiner contends that Hileman teaches a SIMM card, which is a semiconductor device, having an edge connection portion (Ans. 10). The Examiner also contends that the contacts in Hileman can be of the kind set forth in U.S. Patent 5,661,339 to Clayton that Appellants cited as prior art (Ans. 10).

Appellants assert that Hileman teaches a computer chassis cover that pushes an electronic card into a motherboard, thus reducing the force an individual must exert to install the card (App. Br. 6). Appellants further assert there is a set of connectors mounted to the motherboard and the electronic card may be coupled and electrically connected to the motherboard by pushing the edge of the printed circuit board into a connector on the chassis (App. Br. 6) by rotating a chassis cover to a closed position to push the electronic cards into the connectors. "Additionally, the bottom surface of the chassis cover contains a series of ridges and grooves that restrain the electronic cards" (App. Br. 6). Appellants conclude that Hileman lacks any express or inherent description of a method of "securing a semiconductor to a carrier substrate that includes stub contacts extending or protruding from an edge of the semiconductor device. Instead, Hileman quite clearly describes a connector edge with printed or plated contacts" (App. Br. 7). Further, as known in the art, such contacts are flat structures that are etched, laminated, or plated onto the surface of the carrier substrate and "*do not extend or protrude* from any portion of the carrier substrate, let

[1] Appellants argue independent claims 1 and 16 together (App. Br. 7).

alone *from an edge* thereof." (App. Br. 7) This is evidenced by Clayton showing the contacts are planar (Reply Br. 2). We do not agree.

First, it is noted that the SIMM device of Hileman contains semiconductor devices thereon, and is itself considered a semiconductor device. Second, Hileman and Clayton show and claim 1 recites that the stub contacts extend from the bottom edge of the semiconductor device not the carrier substrate as Appellants assert. Further, in SIMM devices such as Hileman teaches, contact pads are on at least one edge of the SIMM. This SIMM is then pushed into a slot of a connector (col. 1, ll. 28-32; FF 3). Thus, both Appellants' invention and Hileman have some sort of contact pads, which by definition must extend or protrude (however so slightly, *see* FF 1) from the semiconductor/SIMM device. Clayton also teaches that the contact pads can extend or protrude from the edge of the SIMM (see col. 5, ll. 1-24 and ll. 28-30).

Hileman further teaches that the SIMM device, having plated contacts thereon, is inserted into a motherboard connector (FF 4). The SIMM card is "coupled to the motherboard **22** by pushing the connector edge **28** of the printed circuit board **26** into a connector **20**." (Col. 2, ll. 41-43). Thus, all the elements of claim 1, and thus claim 16, are taught by Hileman.

With respect to claims 6 and 22, Appellants allege that Hileman does not expressly or inherently describe inserting a semiconductor device into a receptacle of an alignment device that comprises a heat sink material. Rather, Appellants urge, Hileman teaches a blower fan that is not a "heat sink material." (App. Br. 7). The Examiner, however, correctly contends that the heat sink is not the blower fan, but rather the "computer chassis as a

whole is the heat sink since the blower fans move hot air away from the components on the motherboard." (Ans. 5).

With respect to claims 9-11 and 24-26, Appellants allege that Hileman does not expressly or inherently describe removing a semiconductor device from at least one receptacle and replacing it with another. Rather, Appellants urge, Hileman only discloses installation of electronic cards (App. Br. 8).

The Examiner contends that upgrading computer memory is well known in the art. We agree. Further, Hileman teaches the attachment and detachability of SIMM cards allows an end user to readily "add, replace and subtract memory from the computer." (Col. 2, ll. 43-45). We find that Hileman, for the reasons presented above, teaches the features of claims 9-11 and 24-26.

With respect to claims 13 and 28, Appellants assert that Hileman does not expressly or inherently describe securing an alignment device to the carrier substrate with a z-axis elastomer. The Examiner, however, contends that the plastic retaining clips for the SIMM card in Hileman are made of elastomer (Ans. 6). We cannot agree. Hileman does not mention that a securing device is made of an elastomer. It is further known that securing devices, such as retaining clips, can be made of plastic or metal, not necessarily of a z-axis elastomer. Thus, because Hileman does not teach plastic retaining clips must necessarily be of a z-axis elastomer, we reverse the Examiner's rejection of claims 13 and 28 as anticipated by Hileman.

Appellants argued remaining claims 2-5, 7, 8, 12, 14, 15, 17-21, 23, 27, 29, and 30 are allowable because they depend "directly or indirectly from independent" claims 1 and 16, which are allowable (App. Br. 7, 8).

Since no additional arguments were provided by Appellant, these claims fall with claims 1 and 16.

For the reasons set forth above, we sustain the Examiner's rejection of claims 1-12, 14-27, 29, and 30 over Hileman and reverse the Examiner's rejection of claims 13 and 28.

CONCLUSION

We therefore conclude that the Examiner did not err in rejecting claims 1-12, 14-27, 29, and 30 under 35 U.S.C. § 102(b) and that the Examiner erred in rejecting claims 13 and 28 under 35 U.S.C. § 102(b).

DECISION

The decision of the Examiner rejecting claims 1-2, 14-27, 29, and 30 is affirmed. The decision of the Examiner rejecting claims 13 and 28 is reversed.

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-IN-PART

tdl/GW

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