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THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte KUG S. LEE
and KHEE PARK

Appeal No. 95-2740
Application 08/013,348¹

HEARD: OCTOBER 12, 1995

MAILED

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**PAT.&T.M. OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES**

Before LYDDANE, ABRAMS and McQUADE, *Administrative Patent Judges*.
ABRAMS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the decision of the examiner's final rejection dated February 16, 1994 (Paper No. 7), which was directed to claims 1 through 10. At that point in the prosecution, no claims had been allowed, but dependent claim 8 had been indicated as containing allowable subject matter. Subsequently, the appellants canceled claim 8 and presented the subject matter contained therein in independent form as new claim 11 (Paper No.

¹ Application for patent filed February 4, 1993.

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8), which was allowed. Therefore, the claims before us on appeal are 1 through 7, 9 and 10.

The appellants' invention is directed to an apparatus for holding a plurality of semiconductor components for mounting upon a circuit board or the like (claims 1 through 6), to the combination of the apparatus and a plurality of semiconductor components (claims 9 and 10), and to a method for vertically mounting a plurality of semiconductor components (claim 7). The subject matter before us on appeal is best illustrated by reference to claim 1, which reads as follows:

1. An apparatus for vertically mounting a plurality of semiconductor components inserted therein, each having electrical leads extending therefrom to a circuit board comprising:

an extended body made from a heat dissipative material, said body having a plurality of spaces, each said space conforming generally to one of the semiconductor components, said spaces positioned and oriented within the extended body to hold said respective semiconductor components with leads exposed and in a vertical mounting orientation relative to the circuit board such that said leads extend in a direction parallel to a semiconductor component insertion direction.

THE REFERENCES

The references relied upon by the examiner to support the final rejection are:

Grossmann et al. (Grossmann)	4,638,404	Jan. 20, 1987
Kawabata et al. (Kawabata)	4,953,283	Sep. 4, 1990
Sang	5,169,347	Dec. 8, 1992
Besanger	5,208,733	May 4, 1993

The prior art as shown by the appellants in Figures 1A, 1B, 2A and 2B of the drawings and explained on pages 1 and 2 of the specification (the admitted prior art).

THE REJECTIONS

The following are the rejections set forth by the examiner:

(1) Claims 1 through 3 under 35 U.S.C. §.102(b) as being anticipated by Kawabata.

(2) Claims 1 through 6, 9 and 10 under 35 U.S.C. § 103 as being unpatentable over Kawabata in view of Sang with or without Grossmann.

(3) Claims 1 through 3, 9 and 10 under 35 U.S.C. § 103 as being unpatentable over the admitted prior art in view of Besanger or vice versa.

(4) Claims 1 through 3, 7, 9 and 10 under 35 U.S.C. §.103 as being unpatentable over the admitted prior art in view of Besanger and Sang.

The rejections are explained in Paper No. 7 dated February 16, 1994.

The opposing viewpoints of the appellants are set forth in the Brief on Appeal and the Reply Brief.

OPINION

Independent claim 1 is directed to "[a]n apparatus for vertically mounting a plurality of semiconductor components inserted therein. . ." (emphasis added). In view of this expression of intended use, we interpret this claim to cover only the apparatus, and not the combination of the apparatus and the semiconductor components with which it is used. This is con-

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firmed by the explanation in the Brief that "[t]he claimed apparatus is set forth in claim 1" (page 2), while "[c]laim 9 recites the combination of the claimed mounting apparatus and a plurality of electronic components oriented therein" (page 3). This interpretation is quite relevant, for it bears upon the rejection of claim 1 as being anticipated by Kawabata.

The guidance provided by our reviewing court with regard to the matter of anticipation is as follows: Anticipation under 35 U.S.C. § 102(b) is established only when a single prior art reference discloses, either expressly or under the principles of inherency, each and every element of the claimed invention. See *In re Paulsen*, 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994) and *In re Spada*, 911 F.2d 705, 15 USPQ2d 1655 (Fed. Cir. 1990). Anticipation by a prior art reference does not require either the inventive concept of the claimed subject matter or recognition of inherent properties that may be possessed by the reference. See *Verdegaal Brothers Inc. v. Union Oil Co. of California*, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). Nor does it require that the reference teach what the applicant is claiming, but only that the claim on appeal "read on" something disclosed in the reference, *i.e.*, all limitations of the claim are found in the reference. See *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). It is only necessary that the reference include structure capable of

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performing the recited function in order to meet functional limitations of the claim. See *In re Mott*, 557 F.2d 266, 194 USPQ 305 (CCPA 1977).

Kawabata is directed to a device for simultaneously holding a plurality of semiconductor components in spaced relationship to one another for the purposes of "measurement, marking, taping, magazinization, mounting and the like" (column 1, lines 30 and 31, emphasis added). In Kawabata a plurality of semiconductor components (column 1, line 8 et seq.) are inserted in spaces (14), with each space conforming generally to the shape of the semiconductor component installed therein (Figure 3, for example). The extended body (10) is made from a heat dissipative material (column 5, lines 1 through 5).

We agree with the appellants that this reference does not disclose using the apparatus for holding semiconductor components which have exposed electrical leads extending in a direction parallel to a semiconductor component insertion direction (that is, perpendicular to the plane of the apparatus), as is mentioned in claim 1. However, that recitation is but an intended use and does not, therefore, constitute a structural limitation. In contrast to claim 9, claim 1 does not, by the appellants' own admission, cover the combination of a mounting apparatus and the component mounted thereon. Kawabata does contemplate using the board to hold semiconductor components in position for mounting

(Figure 5; column 5, line 56 *et seq.*). Thus, the only difference in this respect is the type and location of the leads of the components that are held.

It is our opinion that the Kawabata apparatus is capable of holding the type of components described in the appellants' claim 1 in the orientation recited. We agree with the examiner that the structure claimed therein is anticipated by Kawabata, and we will sustain this rejection of claim 1, as well as that of dependent claims 2 and 3 on the same grounds, the appellants having decided to group them with claim 1 (Brief, page 4).

The essence of the appellants' argument in rebuttal to the examiner's conclusion is that since Kawabata does not explicitly teach orienting the semiconductor components so that the attachment leads extend in a direction parallel to the component insertion direction, it cannot anticipate the claim (Brief, pages 5 and 6). However, as we have described above, the guidance provided by our reviewing court does not support such a conclusion, for it states that it is not necessary that a reference teach the inventive concept in order to be anticipatory of the claim language, but only that the language be readable on the structure disclosed by the reference (*supra*, p.4).

Claim 1 also stands rejected under 35 U.S.C. § 103 as being unpatentable over Kawabata in view of Sang, taken with or without Grossmann. The test for obviousness is what the combined teach-

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ings of the prior art would have suggested to one of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). In establishing a *prima facie* case of obviousness under 35 U.S.C § 103, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See *Ex parte Clapp*, 227 USPQ 972 (BPAI 1985). To this end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

As we have stated above, it is our view that all of the structure that is positively recited in claim 1 is taught by Kawabata, and the referenced apparatus is capable of being used to hold the type of semiconductor component that is mentioned in claim 1, and in the manner recited. This being the case, while the examiner now has grouped claims 1 through 3 with other claims, and has added other references to the rejection, we stand by our opinion that the subject matter of claims 1 through 3 is unpatentable, anticipation being the epitome of obviousness. See *In re Fracalossi*, 681 F.2d 792, 215 USPQ 569 (CCPA 1982).

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We therefore will sustain the rejection of claims 1 through 3 as being unpatentable over Kawabata in view of Sang, with or without Grossmann.

Claim 4 adds to claim 1 the requirement that the body of the apparatus further include "leg protrusions displacing the extended body from the circuit board." Sang discloses leg protrusions (58) on a device used for holding terminal pins during their installation. However, we fail to perceive any teaching, suggestion or incentive which would have led one of ordinary skill in the art to add such to the Kawabata device. First of all, Sang does not state why the legs are present; all that can be discerned is that it has something to do with the fact that the terminal pins are soldered to the board (column 4, lines 33 through 36). Second, Kawabata teaches only one way of attaching the semiconductor components to the board, and that is by way of taping (column 6, line 48 et seq.), and the components do not have protruding leads which could be soldered. The question then becomes why one would have added such feet to the Kawabata apparatus, and this has not been convincingly answered by the examiner, nor is it apparent to us. It is our view that one of ordinary skill in the art would not have found in these two references the requisite suggestion to combine the references in the manner proposed by the examiner.

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Grossmann is directed to mounting components in a pressing relationship to a heat sink which has U-shaped legs (31, Figure 3). Grossmann establishes no reasoning for the presence of these legs and, as was the case with Sang, we can discern no reason why one of ordinary skill in the art would have provided them on the Kawabata device. Therefore it is our view that consideration of Grossmann fails to alleviate the deficiencies in the basic combination of Kawabata and Sang.

The rejection of claim 4 as being unpatentable over Kawabata and Sang, with or without Grossmann, is not sustained.

Claim 5 adds to claim 1 the requirement that the body form a U-shaped structure, and claim 6 further requires that this be separately formed. The same references are applied as were against claim 4, and the rejections of these two claims on the basis of Kawabata, Sang and Grossmann will not be sustained for the same reasons.

Independent claim 9 is directed to the combination of a plurality of semiconductor components having electrical legs extending therefrom and a mounting apparatus that holds the components with the leads exposed and extending in a direction parallel to an insertion direction. It also stands rejected on the basis of Kawabata and Sang, with or without Grossmann. As was discussed above, the components disclosed by Kawabata do not have electrical leads extending therefrom, much less leads

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extending in a direction parallel to a semiconductor insertion direction. The examiner has not explained his position with regard to claim 9, and we are at a loss, on our own, to determine by what rationale and for what reasons one of ordinary skill in the art would have modified Kawabata by the teachings of the other two references.

We will not sustain the rejection of claim 9 or of claim 10, which depends therefrom.

Claims 1 through 3, 9 and 10 further stand rejected as being unpatentable over the admitted prior art in view of Besanger or vice versa. The examiner once more did not favor us with rationale directed specifically to any of the claims herein rejected. However, it would appear that his position is that Besanger discloses the claimed extended body for vertically mounting the components in spaces, and the admitted prior art discloses the specific type of component to be held.

We find in Besanger not a means for holding semiconductor components with the leads exposed but, as is explained therein, a molded heat sink (16) which is constructed by pouring material over the semiconductor components that already have been installed upon the circuit board (column 4, line 28 et seq.; Figures 4 through 6). Whether the components have exposed leads is not discernible, nor is the manner in which they are in-

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stalled. It also is not clear that the heat sink is capable of holding the components in the manner required by these claims.

Absent compelling argument to the contrary from the examiner, we are constrained not to sustain the rejection of any of the cited claims on the basis of the admitted prior art and Besanger, or vice versa.

Finally, claims 1 through 3, 7, 9 and 10 have been rejected as being unpatentable over the admitted prior art, Besanger, and Sang. It is our conclusion that the addition of Sang does not overcome the shortcomings of the other two references; it merely discloses holding a plurality of mounting prongs during their installation upon a circuit board. We fail to appreciate the examiner's rationale on our own analysis, and we again point out that direction from him with regard to each of the claims is lacking.

The rejection of claims 1 through 3, 7, 9 and 10 as being unpatentable over the admitted prior art, Besanger and Sang is nor sustained.

Summary:

The rejection of claims 1 through 3 as being anticipated by Kawabata is sustained.

The rejection of claims 1 through 3 as being unpatentable over Kawabata in view of Sang, with or without Grossmann, is sustained.

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Cushman, Darby & Cushman
1100 New York Ave., N.W.
9th Flr.
Washington, DC 20005-3918