

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte JOSEPH YING-YUEN CHAN

Appeal No. 2002-2118
Application No. 09/010,614

ON BRIEF

Before FRANKFORT, STAAB, and NASE, Administrative Patent Judges.
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1, 5 and 6, which are all of the claims pending in this application.

We AFFIRM-IN-PART.

BACKGROUND

The appellant's invention relates to a process and apparatus for securing a temporary lid to a chip substrate to aid in movement of the chip substrate during automated card assembly operations (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellant's brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Seto et al. (Seto)	5,507,657	Apr. 16, 1996
Ikesugi et al. (Ikesugi)	5,688,133	Nov. 18, 1997

Claims 1 and 5 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Seto.

Claims 1 and 5 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ikesugi.

Claim 6 stands rejected under 35 U.S.C. § 103 as being unpatentable over Ikesugi.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the answer (Paper No. 21, mailed May 20, 2002) for the examiner's complete reasoning in support of the rejections, and to the brief (Paper No. 20, filed February 25, 2002) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

The anticipation rejection based on Seto

We will not sustain the rejection of claims 1 and 5 under 35 U.S.C. § 102(b) as being anticipated by Seto.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.

Verdegaal Bros. Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir.), cert. denied, 484 U.S. 827 (1987). The inquiry as to whether a reference

anticipates a claim must focus on what subject matter is encompassed by the claim and what subject matter is described by the reference. As set forth by the court in Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983), cert. denied, 465 U.S. 1026 (1984), it is only necessary for the claims to "'read on' something disclosed in the reference, i.e., all limitations of the claim are found in the reference, or 'fully met' by it."

Claim 1 reads as follows:

A process for manufacturing a microelectronic package which has at least two sides, each side having a length, comprising:
frictionally attaching, along the length of at least two sides of the package, without the use of an adhesive, a removable and temporary clip to the microelectronic package, the clip having a top surface and at least two sides;
engaging the clip with a pick-and-place tool;
moving the package through a series of manufacturing steps; and
removing the clip.

The appellant argues (brief, p. 7) that Seto does not teach the "frictionally attaching" step of claim 1. We agree.

Seto discloses an electrical connector 12 for mounting to a mounting surface of an electrical apparatus, such as a printed circuit board (not shown), through the engagement of a vacuum-suction nozzle (not shown). As shown in Figure 1, the top of connector 12 is very irregular in shape and does not present any significant smooth

surface for engagement by the vacuum-suction nozzle. Consequently, Seto provides a cover 14 which is slidably mounted onto connector 12 in the direction of arrow "A". The cover does present a generally planar, smooth surface 16 for engagement by the vacuum-suction nozzle.

Referring to Figures 1, 3 and 4 of Seto, electrical connector 12 includes a dielectric housing 18, which includes a bottom surface 20 adapted to be positioned adjacent the mounting surface of the electrical apparatus, such as on the top surface of a printed circuit board. Housing 18 also includes a top surface 22 opposite bottom surface 20 and a pair of side wall means 24 extend between surfaces 20 and 22. The side wall means include first and second downwardly facing shoulders or surfaces 26 and 28, respectively, which facilitate slidably mounting cover 14 onto connector 12.

Referring to Figures 1 and 8-10 of Seto, cover 14 has a pair of forward and outer side walls 40 and a pair of rearward and inner side walls 42.¹ In other words, as best seen in Figure 8, side walls 40 are located outward of side walls 42. Side walls 40 of cover 14 have inwardly directed flanges 40a defining upwardly facing shoulders or surfaces 40b. Side walls 42 have inwardly directed flanges 42a defining upwardly

¹ "Forward" and "rearward" are meant to refer to the direction of arrow "A" (Figure 1) which is the mounting direction of the cover 14 onto connector 12. "Outward" and "inward" are meant to refer to the relative dispositions of side walls 40 and 42 laterally of the mounting direction.

facing shoulders or surfaces 42b. Cover 16 also has forward and rearward transverse flanges 44 and 46, respectively, which depend from the top wall of the cover that defines smooth surface 16. The forward transverse flange 44 is engageable with stop shoulders 48 (Figure 1) of connector housing 18 to define a fully mounted position of the cover on the connector housing.

In operation, cover 14 is slidably mounted onto connector housing 18 in the direction of arrow "A" (Figure 1) until the cover reaches a fully mounted position as shown in Figures 2 and 5-7. Seto teaches (column 3, line 66, to column 4, line 16) that

[t]he cover is mounted on the connector housing with minimal or substantially zero mounting forces as upwardly facing shoulders or surfaces 40b and 42b of the cover easily slide beneath downwardly facing shoulders 28 and 26, respectively, of the connector housing. However, when the cover is mounted on the housing, the cover can be used to manipulate the connector as upwardly facing shoulders 40b and 42b of the cover fully engage or abut against the downwardly facing shoulders 28 and 26, respectively, of the connector. In essence, these interengageable shoulders on the cover and the housing define complementary interengageable releasable retention means that retain the cover on the housing with substantial force in a direction generally normal to smooth surface 16 of the cover, but that same means allows the cover to be mounted onto and removed from the connector housing with minimal or substantially zero forces laterally of that normal direction (i.e. generally parallel to the smooth surface in the direction of arrow "A").

In our view Seto does not teach the "frictionally attaching" step of claim 1 (i.e., frictionally attaching, along the length of at least two sides of the package, without the use of an adhesive, a removable and temporary clip to the microelectronic package).

Seto does teach that the cover 14 is slidably mounted onto connector 12 in the direction of arrow "A" (Figure 1) and that the upwardly facing surfaces 40b and 42b of inwardly directed flanges 40a and 42a of the cover 14 frictionally engage/contact the downwardly facing surfaces 26 and 28 of the connector 12 during movement of the combined connector-cover package by a vacuum-suction nozzle. However, it is our opinion that such frictionally engagement or contact between the upwardly facing surfaces 40b and 42b of cover 14 and the downwardly facing surfaces 26 and 28 of connector 12 does not constitute frictionally attaching the cover along the length of at least two sides of the connector. Accordingly, the "frictionally attaching" step of claim 1 is not readable on Seto.

For the reasons set forth above, the decision of the examiner to reject claim 1 and claim 5 dependent thereon under 35 U.S.C. § 102(b) is reversed.

The anticipation rejection based on Ikesugi

We sustain the rejection of claims 1 and 5 under 35 U.S.C. § 102(e) as being anticipated by Ikesugi.

Ikesugi's invention relates generally to electrical connectors, and more particularly, to a vacuum placement member associated with such connectors which

provides a support for vacuum attachment to the connectors and which provides support to the connector walls during the soldering thereof to a circuit board.

As shown in Figures 5 and 6, a connector placement member 1 is attached to an electrical connector 2 to provide a substantially planar, or flat, surface to the electrical connector 2 when attached thereto. The electrical connector 2 includes a rectangular housing 3 formed from an insulative material. The connector housing 3 has a pair of opposing longitudinal sidewalls 4 which define a slot 10 therebetween which is intended to receive a mating electric connector therein.

The connector placement member 1 is best shown in Figures 1-4 and includes a cover plate 8 having a flat top surface 7 which is engaged by a transfer or placement mechanism in which typically has an internal port communicating with a source of negative air pressure. Once attached, the connector may be transferred from a supply source (not shown) to another electronic assembly component, typically a circuit board 100 (Figure 6). The connector placement member 1 remains in place upon the connector until after the connector is joined to the circuit board.

The connector placement member 1 also includes pairs of resilient engagement legs 6 joined to the ends of the cover plate 8 at the corners thereof. The legs 6 depend

from the cover plate 8 to form a general U-shaped structure. The engagement legs 6 may be considered as comprising two distinct sets of legs which engage the connector 2. One set, a first set of first engagement legs 6, may include gripping portions 112 at their lower ends 114 which may further extend slightly inwardly. Each connector sidewall 4 has recesses 4c disposed in its outer surface 4a which receive the gripping portions 112 of the engagement legs 6. The main engagement legs 6 are formed near the corners of the cover plate 8 with a spacing between opposing aligned legs which is slightly less than the width W (Figure 6) of the connector housing 2 so as to create a slight inward bias to resiliently engage the connector sidewalls 4 in a manner in which the sidewalls 4 are sandwiched therebetween.

In order to resist any deformation which may be induced in the connector sidewalls 4 by virtue of the inwardly directed forces exerted thereupon by the main engagement legs 6, Ikesugi includes a second set of auxiliary engagement legs 9 which extend downwardly from the cover plate 8 and primarily provide support for the connector sidewalls 4. Each of the auxiliary support legs 9 is preferably aligned with and spaced apart from a corresponding main engagement leg 6 so as to create an intervening space 12 therebetween which is generally aligned with the longitudinal axes of each connector sidewall 4. These spaces, 12 as seen in Figure 6, receive and support the connector sidewalls 4 therein from the interior along their inner surfaces 4b.

The auxiliary legs 9 may be formed in a number of manners. It may be formed by bending a selected extension 9 which is segregated from and punched out of the main engagement leg 6 (Figure 7). When formed, the lateral distance between the outer surfaces 9b of the opposite auxiliary legs 9 is equal to the lateral distance U (Figure 6) between the inner surfaces 4b of the connector sidewalls 4. In order to facilitate the insertion of the connector sidewalls 4 into the intervening space 12, each auxiliary leg 9 may be equipped with an inwardly-bent end 9a which reduces the likelihood of snagging the placement cover auxiliary support legs 9 on the inner surfaces 4b of the connector sidewalls 4.

Ikesugi teaches (column 5, line 65, to column 6, line 20) that

[i]n use, the placement cover 1 is attached to an electric connector 2 by pushing it against the top of the electric connector 2 until the main engagement legs 6 ride down the connector sidewall outer surface 4a until their gripping portions 112 effectively catch in the sidewall recesses 4c. Simultaneously, the auxiliary engagement legs 9 ride down along the connector sidewall surface 4b until the sidewall 4 is effectively sandwiched therebetween. The cover plate 8 thereupon lies upon the connector insertion slot 10 of the connector 2. Inasmuch as the auxiliary support legs 9 extend along the interior 4b of the connector sidewalls 4, each such sidewall 4 is thereby supported by the engagement legs 9 against the forces applied by the main engagement legs 6 of the collector placement cover 1.

When carrying the electric connector 2 to a printed circuit board, the placement member 1 is picked up applying a negative pressure to the flat top surface 7 of the placement cover 1, and then the placement cover-connector assembly is transferred to the printed circuit board 100. Then, the connector-board assembly are passed through a reflow vessel, in which solder

applied to selected portions 102 of the circuit board 100 is melted to solder the solder tail portions 11a of the connector terminals 11 to the circuit board 100.

The appellant argues (brief, pp. 9-10) that claims 1 and 5 are not anticipated by Ikesugi because (1) Ikesugi does not teach the "frictionally attaching" step of claim 1; and (2) the present invention relies exclusively on frictional attachment. We find this argument unpersuasive for the following two reasons.

First, the "frictionally attaching" step of claim 1 is readable on Ikesugi. In that regard, Ikesugi's connector placement member 1 is removable and temporary attached to the electrical connector 2. When so attached (see Figure 6 of Ikesugi), the resilient engagement legs 6 frictionally engage along a length of at least two sides of the electrical connector 2 and the auxiliary engagement legs 9 frictionally engage along a length of at least two sides of the electrical connector 2 all without the use of an adhesive. In addition, the gripping portions 112 of the first engagement legs 6 frictionally engage recesses 4c in the sidewalls 4. The frictionally interengagement of the resilient engagement legs 6 and the auxiliary engagement legs 9 with the connector sidewalls 4 (see Figure 6 of Ikesugi) clearly is the mechanism by which Ikesugi's connector placement member 1 is removable and temporary attached to the electrical connector 2 and thus the "frictionally attaching" step of claim 1 is readable on Ikesugi.

Second, while the present invention relies exclusively on frictional attachment, the claims on appeal are not so limited. It is well established that features not claimed cannot be relied on to establish patentability. See In re Self, 671 F.2d 1344, 1348, 213 USPQ 1, 7 (CCPA 1982). In any event, it is our view that Ikesugi's connector placement member 1 is only frictionally attached to the electrical connector 2 as set forth in the preceding paragraph.

For the reasons set forth above, the decision of the examiner to reject claim 1 and claim 5 dependent thereon under 35 U.S.C. § 102(e) is affirmed.

The obviousness rejection

We will not sustain the rejection of claim 6 under 35 U.S.C. § 103 as being unpatentable over Ikesugi.

Dependent claim 6 adds to parent claim 1 the further limitation that "the clip is removed by inserting a tool into at least one hole located on the top surface of the clip and prying the clip free from the microelectronic package."

In the rejection of claim 6, the examiner ascertained (answer, p. 4) that Ikesugi did not teach this limitation. The examiner then concluded that it would have been

obvious to one of ordinary skill in the art, at the time of the invention, to have removed Ikesugi's connector placement member 1 by inserting an associated tool into the intervening space 12 and prying the connector placement member 1 from the electrical connector 2 as such would only require a simple tool in order to remove the connector placement member 1 from the electrical connector 2 effectively.

The appellant argues (brief, pp. 10-11) that claim 6 is patentable over Ikesugi since the examiner has not cited a reference that teaches the claimed step. We agree.

Evidence of a suggestion, teaching, or motivation to modify a reference may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, from the nature of the problem to be solved, see Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc., 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1630 (Fed. Cir. 1996), Para-Ordinance Mfg., Inc. v. SGS Importers Int'l., Inc., 73 F.3d 1085, 1088, 37 USPQ2d 1237, 1240 (Fed. Cir. 1995), cert. denied, 117 S. Ct. 80 (1996), although "the suggestion more often comes from the teachings of the pertinent references," In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998). The range of sources available, however, does not diminish the requirement for actual evidence. That is, the showing must be clear and particular. See, e.g., C.R. Bard Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir.

1998), cert. denied, 119 S. Ct. 1804 (1999). A broad conclusory statement regarding the obviousness of modifying a reference, standing alone, is not "evidence." Thus, when an examiner relies on general knowledge to negate patentability, that knowledge must be articulated and placed on the record. See In re Lee, 277 F.3d 1338, 1342-45, 61 USPQ2d 1430, 1433-35 (Fed. Cir. 2002). See also In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). When obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference to arrive at the claimed subject matter. See In re Kotzab, 217 F.3d 1365, 1370, 55 USPQ2d 1313, 1316-17 (Fed. Cir. 2000).

Since there is no evidence in the applied prior art² suggesting that it would have been obvious at the time the invention was made to a person of ordinary skill in the art to have modified Ikesugi to arrive at the subject matter of claim 6, the decision of the examiner to reject claim 6 under 35 U.S.C. § 103 is reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1 and 5 under 35 U.S.C. § 102(b) is reversed; the decision of the examiner to reject claims 1 and 5

² The examiner's statement in the last paragraph on page 4 of the answer that claim 6 has been rejected over Ikesugi in view of Official notice is incorrect. The rejection as set forth at the top of page 4 of the answer relies solely on Ikesugi and does not take any Official notice.

under 35 U.S.C. § 102(e) is affirmed; and the decision of the examiner to reject claim 6 under 35 U.S.C. § 103 is reversed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

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