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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HANJOO NA and SANTOSH KUMAR

Appeal 2015-003844
Application 13/187,380
Technology Center 2800

Before TERRY J. OWENS, MARK NAGUMO, and
JENNIFER R. GUPTA, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge.*

DECISION ON APPEAL

STATEMENT OF THE CASE

The Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1–19. We have jurisdiction under 35 U.S.C. § 6(b).

The Invention

The Appellants claimed invention is directed toward "small outline packaging for surface mount integrated circuits" (Spec. ¶ 1). Claims 1 and 6 are illustrative:

> 1. A small outline package for supporting a semiconductor, the package comprising:
> a case enclosing the semiconductor; and
> an "L" shaped lead-frame connected to the semiconductor and supported by the case, the lead-frame

having a horizontal portion attached to a substrate and a vertical portion that extends vertically adjacent to a side of the case to create a separation between the case and the horizontal portion, the separation providing clearance for mounting a device in a footprint of the case.

6. An electronic device comprising:
an integrated circuit;
a case enclosing the integrated circuit;
an "L" shaped lead in electronic communication with the integrated circuit, a vertical portion of the lead extending from an edge of the case about perpendicular to a first surface of the case, a horizontal portion of the lead extending inward about parallel to the first surface of the case; and
a separation between the first surface of the case and the horizontal portion of the lead.

The References

Derouiche	US 5,754,408	May 19, 1998
Tsuji	US 6,603,404 B1	Aug. 5, 2003
Tsui	US 2009/0283919 A1	Nov. 19, 2009

The Rejections

The claims stand rejected as follows: claims 1, 2, 4–8, 10–15, 17, and 18 under 35 U.S.C. § 102(b) over Derouiche, claims 3, 9, and 16 under 35 U.S.C. § 103 over Derouiche, claims 4 and 19 under 35 U.S.C. § 103 over Derouiche in view of Tsui, claims 1–18 under 35 U.S.C. § 103 over Derouiche in view of Tsuji and claims 4 and 19 under 35 U.S.C. § 103 over Derouiche in view of Tsuji and Tsui.

OPINION

We reverse the rejections.

Rejection under 35 U.S.C. § 102(b)

"Anticipation requires that every limitation of the claim in issue be disclosed, either expressly or under principles of inherency, in a single prior art reference." *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1255–56 (Fed. Cir. 1989).

We need address only the independent claims (1, 6, and 12). Claims 1 and 12 require an L-shaped lead[1] having a vertical portion extending vertically adjacent to a side of a case. Claims 6 and 12 require an L-shaped lead having a horizontal portion extending inwardly about parallel to a first surface of a case (claim 6) or package (claim 12).

Derouiche discloses a pair of integrated circuit packages (50a, 50b) either 1) both having gull-wing leads (52a, 52b) extending therefrom outwardly, then vertically, then outwardly, or 2) a top package (50a) having such gull-wing leads (52a) and a bottom package (50b) having J-shaped leads (col. 3, ll. 60–62; col. 4, ll. 63–66; Figs. 7, 9, 13).[2]

The Examiner finds that Derouiche discloses leads having "a vertical portion (of 112a, illustrated in figure 13, not labeled) that extends vertically adjacent to a side of the case" (Ans. 3).

"'[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.'" *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1256 (Fed. Cir. 2007) (quoting *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000)). The Appellants illustrate their

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[1] The Appellants give the terms "lead frame" and "lead" the same meaning (Spec. ¶ 3).

[2] The Examiner states that "Derouiche is not applied in the examiner's answer for a disclosure of 'J' shaped leads" (Ans. 27).

leads' vertical portion (206, 406, 506) as being against the side of the case (102, 202) (Figs. 2–5), and contrast that vertical portion with a gull-wing lead (104)'s vertical portion extending from the case outwardly then vertically (Spec. ¶ 23; Fig. 4). The Examiner does not establish that the broadest reasonable interpretation of the Appellants' claim term "vertically adjacent" consistent with that disclosure includes the vertical portion of Derouiche's gull-wing leads.

Regarding the claim requirement that the lead has a horizontal portion extending inwardly the Examiner finds that "there is a frame of reference wherein the horizontal portion of the lead of Derouiche is oriented extending inward" (Ans. 29–30).

That vague finding does not establish that Derouiche discloses a lead having an inwardly-extending horizontal portion.

The Examiner finds that "Derouiche references more than leads of gull-wing shape and J shape, e.g., the scope of the Derouiche claim 1 lead shape is not limited to a gull-wing and/or J shape lead" (Ans. 23).

The Examiner does not establish that the lack of a recitation of a gull-wing shaped lead or a J-shaped lead in that claim is a disclosure of a lead which extends vertically adjacent to a side of a case or has a horizontal portion extending inwardly.

Thus, the Examiner does not establish that Derouiche discloses every limitation of the rejected claims, either expressly or under principles of inherency. We therefore reverse the rejection under 35 U.S.C. § 102(b).

Rejections under 35 U.S.C. § 103

We need address only the independent claims (1, 6, and 12).[3]

Tsuji discloses a light emitting display device having leads (1) which can be bent perpendicularly outwardly or, to enhance space efficiency on a mounting board or to enable arrangement of devices laterally closer to each other, can be bent perpendicularly inwardly (col. 7, ll. 5–9; col. 12, ll. 40–49; Figs. 1a–c, 10a, 11a, 11b).

The Examiner finds that "one skilled in the art would recognize, and as cited, Tsuji discloses, that the horizontal portion of the lead of Tsuji and the horizontal portion of a lead substantially similar to that of Derouiche (see figure 10a) are alternatives and/or equivalents known in the art" (Ans. 12–13) and concludes that 1) "it would have been obvious to substitute/combine the horizontal portion of the lead of Tsuji for/with the horizontal portion of the lead of Derouiche because it would facilitate provision of the horizontal portion of the lead of Derouiche, and substitution/combination of a known element based on its suitability for its intended use has been held to be prima facie obvious" (Ans. 12), 2) "it would have been obvious to substitute/combine the horizontal portion of the lead of Tsuji with the horizontal portion of the lead of Derouiche because the substitution of, or combination with, one known alternative element for or with another would have yielded predictable results to one of ordinary skill in the art at the time of the invention" (Ans. 13–14) and 3) "it would have been obvious to

[3] With respect to the dependent claims the Examiner does not rely upon Derouiche for any obviousness rationale regarding the above-discussed limitations in the independent claims or rely upon Tsui for any disclosure that remedies the deficiency in the references applied to the independent claims (Ans. 14–23).

combine this [sic, the] disclosure of Tsuji with the disclosure of Derouiche because, as disclosed by Derouiche as cited, it would desirably lead to enhanced space-efficiency on the board" (Ans. 14).

The Examiner provides no support for the finding that Derouiche's and Tsuji's lead configurations were known alternatives or equivalents in the art, and the Examiner's conclusions do not take into account the differences between Derouiche's integrated circuit package and Tsuji's light emitting device and establish that, regardless of those differences, Tsuji's disclosure would have led one of ordinary skill in the art to modify Derouiche's leads such that a horizontal portion thereof extends inwardly or a vertical portion thereof is adjacent to a side of the package's case.

Hence, the Examiner has not set forth a factual basis which is sufficient to support a prima facie case of obviousness of the Appellants' claimed invention. *See In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art"). Consequently, we reverse the rejections under 35 U.S.C. § 103.

DECISION/ORDER

The rejections of claims 1, 2, 4–8, 10–15, 17, and 18 under 35 U.S.C. § 102(b) over Derouiche, claims 3, 9, and 16 under 35 U.S.C. § 103 over Derouiche, claims 4 and 19 under 35 U.S.C. § 103 over Derouiche in view of Tsui, claims 1–18 under 35 U.S.C. § 103 over Derouiche in view of Tsuji and claims 4 and 19 under 35 U.S.C. § 103 over Derouiche in view of Tsuji and Tsui are reversed.

It is ordered that the Examiner's decision is reversed.

REVERSED