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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte HANS PETER PESCHL

Appeal 2010-005384
Application 11/243,287
Technology Center 3700

Before: PHILLIP J. KAUFFMAN, BENJAMIN D. M. WOOD and
JOHN W. MORRISON, *Administrative Patent Judges*.

MORRISON, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF CASE

Appellant appeals under 35 U.S.C. § 134 from the rejection of claims 1-21. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

The claims are directed to convective heat sink, such as may be used for semiconductor cooling. Spec., para. [0001]. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. A heat sink, comprising:
 - a base having a slot, the slot having first and second sidewalls;
 - a fin having an end press-fitted into the slot, the fin end comprising a first surface conformally engaged with the first sidewall and a second surface having one or more protrusions cold-welded to the second sidewall, said one or more protrusions extending laterally along a length of the second surface.

REFERENCES

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Kizaki	US 4,266,156	May 5, 1981
Wroblewski	US 4,327,311	Apr. 27, 1982
Bock (EP)	EP 0 483058 A1	Oct. 4, 1991
Hess	US 5,014,776	May 14, 1991
Bock (US)	US 5,682,948	Nov. 4, 1997
Mira	US 5,709,263	Jan. 20, 1998
Brendel	US 5,905,627	May 18, 1999
Nielsen	US 6,493,227 B2	Dec. 10, 2002
Enquist	US 6,500,694 B1	Dec. 31, 2002
Gailus	US 6,520,248 B2	Feb. 18, 2003

REJECTIONS

The Examiner made the following rejections¹:

1. Claims 1-7 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.
2. Claim 1-7 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.
3. Claims 1, 2, 5, 6, 8-10, 15, 18, 20, and 21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bock (EP) and Bock (US).
4. Claims 3, 4, 12, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bock (EP), Bock (US), and Mira.
5. Claims 6, 7, 10, and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bock (EP), Bock (US), and Gailus.
6. Claims 14 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bock (EP), Bock (US) and Hess.
7. Claims 15-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bock (EP), Bock (US) and Nielsen.

ANALYSIS

1. Written Description

Addressing claims 1-7, the Examiner determines that a fin being press-fitted so that a surface of that fin is cold-welded as called for in claim 1 is not supported by Appellant's disclosure. Ans. 3, 9-10. In this respect, the Examiner believes there is a difference between 'press-fitting' and 'cold welding,' both processes of which, are encompassed by the generic term

¹ Appellant has also requested review of objections to Figure 9. App. Br. 30-31.

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‘pressing.’” Ans. 9-10. The Examiner further cites paragraphs [0009]-[0011] for support that 2 sided cold welding is an alternative to conical press fitting which requires “precision and finishing.” Ans. 10; Spec., paras. [0009], [0011].

Appellant contends that the Examiner’s determination

rests on the same proposition that the terms cold-welded and press-fitted in claim 1 are mutually exclusive process limitations, and that Applicant's specification describes press fitting and cold welding as alternative processes that cannot be done together. The filed application makes clear that forcible insertion of a fin end into a base slot results in a press-fitted fin end. However, the application also makes clear that forced pressing of a fin end having one side configured for conformal engagement and one side configured for cold welding results in a fin that, as a result of forcible insertion into a base slot, has a conformally engaged side and a cold welded side.

App. Br. 11. We are persuaded by Appellant’s argument. The joint formed clearly has 2 surfaces. One surface is conformally engaged, similar to the conical press fit described in paragraph [0009] and the other surface has protrusions that are “cold welded” as described in paragraph [0011]. Both types of bonds would be formed by a single press fitting of the fin into the slot in the base of the heat sink. Thus, one skilled in the art would conclude that Appellant was in possession of the claimed invention at the time of filing. Therefore, we do not sustain the written description rejection under U.S.C. § 112, first paragraph, of claims 1-7.

2. *Indefiniteness*

Addressing claims 1-7, the Examiner concedes “if the rejection under 35 U.S.C. [§] 112, first paragraph[,] is reversed, then the rejection under 35 U.S.C. [§] 112, second paragraph[,] would be withdrawn.” Ans. 9.

Therefore, we do not sustain the indefiniteness rejection under U.S.C. § 112, second paragraph, of claims 1-7.

3. *Obviousness over Bock (EP) and Bock (US)*

Addressing Claims 1-2, 5-6, 8-10, 15, 18 and 20-21, the Examiner has concluded

[i]t would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Bock (EP) a joint having a first end with a conforming first surface and a grooved second surface received in slot for the purpose of achieving a desired mechanical connection as recognized by Bock (US).

Ans. 5. Appellant counters that

[t]he smooth-on-one side/rough-on-one side features taken from Bock US come from joints between flanking walls 16 of interconnected heat sink bases 14, and not from heat sink fins in those bases. Bock US does not teach that these joints are press fitted, or that they have a conformally-engaged side and a cold-welded side. These structural features are not inherent in the arrangement shown in Bock US.

App. Br. 12. We agree with Appellant. The Examiner makes no finding that the joints of the proposed combination would have a conformally engaged side and a cold-welded side as required by independent claims 1 and 8.

The Examiner then determines that “press-fitted” and “cold welded” were deemed to be product-by-process recitations. “In this respect, the process recitations were afforded limited patentable weight.” Ans. 11

Appellant counters that

[w]ithin the context of claim 1, press fitting a fin end having the claimed end surfaces—one smooth, one with protrusions—produces key structural distinctions that are not found in any combination of the cited references: (1) the smooth surface of the press-fitted fin end is conformally engaged with one slot sidewall; and (2) the protuberances on the other fin end surface are cold-welded to the other slot sidewall.

App. Br. 17.

The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. *See In re Garnero*, 412 F.2d 276, 279 (CCPA 1969). In this case, the manufacturing processes of conformal engagement and cold welding impart distinct structural characteristics, including “thermal advantages.”

App. Br. 15. The thermal performance of the joint between a heat sink and a fin is a distinctive structural characteristic that must be considered. The Examiner has not found this structure in the prior art. Thus, for the above reasons, we cannot affirm the obviousness rejection of claims 1-2, 5-6, 8-10, 15, 18 and 20-21.

Rejections 4-7

Rejections 4-7 rely on additional references of Mira, Gailus, Hess, and Nielson, respectively, to address limitations of various dependent claims. However, none of these references cures the underlying deficiency of the combination of Bock (EP) and Bock (US) which fails to render the underlying independent claims 1 or 8 obvious. As such, we cannot affirm rejections 4-7.

Objection to the Drawings

Appellant has requested “[i]f appropriate for resolution by the BPAI, Applicant would appreciate having the record settled in that the originally disclosed Fig. 9 amply illustrates the bevel features at issue in claims 3, 4, 12, and 13.” App. 30-31. Ordinarily, an objection is a petitionable matter, and not an appealable one. *See Manual of Patent Examining Procedure* (MPEP) §§ 706.01 and 1201 (8th ed., Rev. 9, Aug. 2012); *see also Ex Parte Frye*, 94 USPQ2d 1072, 1077-78 (BPAI 2010) (precedential) (similarly determining an objection to the drawings was outside of the Board’s jurisdiction).

Further, addressing the rejections before us does not require consideration of the bevel feature of described in Figure 9. In other words, the objection does not relate to the rejections. *See In re Hengehold*, 440 F.2d 1395, 1404 (CCPA 1971) (“the kind of adverse decisions of examiners which are reviewable by the board must be those which relate, at least indirectly, to matters involving the rejection of claims”). In this case, we do not need to address the objections to Figure 9 to reach a decision on the rejections.

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DECISION

For the above reasons, the Examiner's rejection of claims 1-21 is reversed.

REVERSED

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