

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**COOLIT SYSTEMS, INC.,**  
*Appellant*

v.

**KATHERINE K. VIDAL, UNDER SECRETARY OF  
COMMERCE FOR INTELLECTUAL PROPERTY  
AND DIRECTOR OF THE UNITED STATES  
PATENT AND TRADEMARK OFFICE,**  
*Intervenor*

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2022-1221

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Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2020-00747, IPR2020-00825.

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Decided: March 7, 2024

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REUBEN H. CHEN, Cooley LLP, Palo Alto, CA, argued for appellant. Also represented by HEIDI LYN KEEFE; DUSTIN KNIGHT, Washington, DC; LLOYD L. POLLARD, II, Workman Nydegger, Salt Lake City, UT.

MONICA BARNES LATEEF, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA,

argued for intervenor. Also represented by PETER J. AYERS, MAI-TRANG DUC DANG, FARHEENA YASMEEN RASHEED.

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Before LOURIE, BRYSON, and STARK, *Circuit Judges*.

LOURIE, *Circuit Judge*.

CoolIT Systems, Inc. (“CoolIT”) appeals from a final written decision of the United States Patent and Trademark Office (“PTO”) Patent Trial and Appeal Board (“the Board”) holding claims 1–3, 5, 7, and 25 of U.S. Patent 9,057,567 (the “’567 patent”) unpatentable. *Asetek Danmark A/S v. CoolIT Sys., Inc.*, IPR2020-00747, 2021 WL 4861000 (P.T.A.B. Sept. 30, 2021) (“*Decision*”). For the following reasons we *vacate* and *remand*.

#### BACKGROUND

The challenged patent claims priority from two provisional applications, Provisional Application 61/512,379 (the “2011 Provisional”) and Provisional Application 60/954,987 (the “2007 Provisional”). It is directed to a system for fluid heat transfer to cool electronic devices. ’567 patent, Abstract. Representative claim 1 is reproduced below.

1. A heat exchange system comprising:

a heat sink having a plurality of juxtaposed fins defining a corresponding plurality of microchannels between adjacent fins, wherein the heat sink defines a recessed groove extending transversely relative to the fins;

*a housing member defining a first side and a second side, wherein the second side defines a recessed region;*

*a compliant member matingly engaged with the second side of the housing member, wherein the compliant member at least partially defines an*

opening positioned over the groove, wherein the compliant member and the groove together define a portion of an inlet manifold configured to hydraulically couple in parallel each of the microchannels to at least one other of the microchannels, and wherein the housing member further defines a portion of an inlet plenum,

wherein the inlet plenum and the inlet manifold are together configured to convey a fluid in a direction generally transverse to the fins and thereby to distribute the fluid among the plurality of microchannels and to convey the fluid into the plurality of microchannels in a direction generally parallel to the fins,

*wherein a portion of the compliant member occupies a portion of the recessed region defined by the second side of the housing member and urges against a corresponding wall of the recessed region while leaving a portion of the recessed region defined by the second side of the housing member unoccupied to define first and second exhaust manifold regions positioned opposite to each other relative to the recessed groove and opening from end regions of the microchannels.*

'567 patent, col. 19 ll. 16–46 (emphases added).

The term “matingly engaged” appeared for the first time in the 2011 Provisional. *See* Appellant’s Br. at 5–10. According to CoolIT, such a connection is depicted in Figures 7–12 of the '567 patent, which also first appeared in the 2011 Provisional. *Id.* According to CoolIT, Figures 2–6 of the '567 patent purportedly show an alternative means of connection, *i.e.*, fusing, that was disclosed in the 2007 Provisional. *Id.* In another, now-final *inter partes* review (“IPR”) decision from the same panel as on review here, the Board found that the 2007 Provisional disclosed only a single approach for connecting the housing with the plate and

seal: by fusing. *Asetek Danmark A/S v. CoolIT Sys., Inc.*, IPR2020-00825, 2021 WL 4868406 at \*10 (P.T.A.B. Oct. 12, 2021) (“[T]his language only describes one method of connecting components—overall fusing techniques. It does not follow from this language that the inventor envisioned a second method of connecting components in which compliant surfaces would have been desirable.”).

Asetek Danmark A/S (“Asetek”) petitioned for IPR of the ’567 patent, asserting anticipation based on Bezama<sup>1</sup> and obviousness based on Lyon<sup>2</sup> in combination with Bezama. *Decision* at \*3. Lyon has the same inventor as the ’567 patent and also claims priority from the 2007 Provisional, but *not* from the 2011 Provisional. In its petition, Asetek argued that the challenged claims of the ’567 patent were not entitled to a priority date earlier than the filing of the 2011 Provisional, which CoolIT did not dispute. Intervenor’s Br. at 5 n.6; *see also Decision* at \*3 n.3.

The parties disputed the meaning of the term “matingly engaged.” CoolIT argued that it should be construed as “mechanically joined or fitted together to interlock.” *Id.* at \*6. Asetek initially proposed no construction, but then argued in its reply brief that “matingly engaged” should be construed as “joined or fitted together to make contact,” encompassing “[a]ll methods of joining or fixing two surfaces.” *Id.* CoolIT responded that Asetek’s construction requiring mere contact read “matingly” out of the limitation, as parts that are joined or fitted together would always “make contact” with one another. *Id.* at \*7. CoolIT further argued that, regardless of the construction, neither Lyon nor Bezama disclosed that limitation because its components

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<sup>1</sup> U.S. Patent Application Publication 2010/0012294, published Jan. 21, 2010 (“Bezama”)

<sup>2</sup> U.S. Patent Application Publication 2009/0071625, published Mar. 19, 2009 (“Lyon”).

were fused together or merely abutting, rather than “fitted together.” *Id.* at \*11.

The Board found CoolIT’s proposed construction of “matingly engaged” to be too narrow and Asetek’s to be too broad. *Decision* at \*7–8. It did not determine the meaning or precise metes and bounds of “matingly engaged,” but “partial[ly] constru[ed]” the term as at least being satisfied “when at least a portion of the recited compliant member is fitted within the recessed region defined by the second side of the housing member.” *Id.* at \*9 (“This partial construction is sufficient to resolve the issues in dispute.”). The Board acknowledged that both parties agreed that the term encompasses parts that are “joined or fitted together” in some fashion, as the parties agreed that the term “mate” meant “join or fit together,” but disagreed on the term “engage.” *Id.* at \*7. The Board found that the term was not “so broad as to encompass any method of joining or [fitting] surfaces,” but did not reach the question whether or not “matingly engaged” could encompass other forms of engagement besides fitting. *Id.* at \*8. It rejected CoolIT’s use of the word “interlock” because, in part, it believed that CoolIT was arguing without evidentiary support that such construction would require a connection that would take force to break. *Id.* at \*6–8.

Applying its partial construction, the Board found that Lyon disclosed a compliant member that is “matingly engaged” with the bottom side of the housing. *Decision* at \*11. The Board determined that Lyon “teaches or at least suggests” a plate that is “fitted to the recessed region on the bottom of Lyon’s housing.” *Id.* The Board found that it was of no consequence that “the term ‘matingly engaged’ was first added in the 2011 Provisional, and is not used in Lyon,” because Lyon still “teaches or at least suggests mating engagement of the type required by claim 1.” *Id.* at \*12. It also explained that CoolIT’s argument that Lyon’s fusing of its plate/seal to its cover would not constitute mating engagement was “not persuasive” because its decision did

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