NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

MANUFACTURING RESOURCES INTERNATIONAL, INC.,
Appellant

v.

JOHN A. SQUIRES, UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenor

2024-2224, 2024-2231

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2023-00221, IPR2023-00254.

Decided: April 7, 2026

DAVID A. REED, Kilpatrick Townsend & Stockton LLP, Atlanta, GA, argued for appellant. Also represented by MICHAEL T. MORLOCK; JOHN C. ALEMANNI, CARL SANDERS, Raleigh, NC.

FAHD H. PATEL, Office of the Solicitor, United States

Patent and Trademark Office, Alexandria, VA, argued for intervenor. Also represented by NICHOLAS THEODORE MATICH, IV, ROBERT J. MCMANUS, MICHAEL TYLER.

Before PROST, TARANTO, and STOLL, *Circuit Judges*.

STOLL, *Circuit Judge*.

Manufacturing Resources International, Inc. owns U.S. Patent Nos. 10,506,740 and 11,013,142, which describe and claim cooling systems for electronic displays. The patented cooling systems use two separate flow paths—an open loop ambient air flow path and a closed loop gas circulation path—and a common "heat exchanger." The closed loop path travels across the front of the display and continues to the rear of the display where it may enter the heat exchanger. Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc. successfully petitioned for inter partes reviews of claims 1–3, 5–9, 11–13, 15–18, and 20 of the '740 patent and claims 1–15 of the '142 patent on obviousness grounds. The Patent Trial and Appeal Board construed "heat exchanger" to not require enclosed channels or tubes and found that MRI's objective evidence of nonobviousness was entitled to little weight. As a result, the Board held all challenged claims unpatentable. MRI appeals, challenging the Board's construction of "heat exchanger" and its findings that MRI's objective evidence of nonobviousness was entitled to little weight. We affirm.[1]

I

We first address MRI's argument that the Board's obviousness determinations are based on an improper

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[1] Samsung notified us of its nonparticipation in the case. The Director timely intervened pursuant to 35 U.S.C. § 143.

construction of "heat exchanger." Before the Board, the parties did not dispute that a skilled artisan at the time of the invention would have understood that a "heat exchanger" broadly includes many forms, including having enclosed channels or tubes. MRI argued that the term "heat exchanger," as specifically used in the claims and patent specifications, however, requires "alternating, enclosed channels or tubes of fluid." J.A. 19 (citation omitted). The Board disagreed, holding that a "heat exchanger may, but does not have to, include enclosed channels or tubes." J.A. 33.

Claim construction is ultimately a question of law reviewed de novo. *Intel Corp. v. Qualcomm Inc.*, 21 F.4th 801, 808 (Fed. Cir. 2021). "When construing claim terms, we first look to, and primarily rely on, the intrinsic evidence, including the claims themselves, the specification, and the prosecution history of the patent . . . ." *Sunovion Pharms., Inc. v. Teva Pharms. USA, Inc.*, 731 F.3d 1271, 1276 (Fed. Cir. 2013) (first citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005) (en banc); and then citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)). After reviewing the parties' arguments and the intrinsic evidence, we adopt the Board's construction of the term "heat exchanger." First, the plain language of the claims does not support MRI's narrowing construction. Claim 1 of the '740 patent is representative and the relevant limitation states: "a common heat exchanger located in the pathway of both the closed loop gas circulation path and the open loop ambient air flow path." U.S. Patent No. 10,506,740 col. 9 ll. 61–63. Nothing in this limitation or elsewhere in the claim limits the type of heat exchanger required by the claim. The claim does not recite that the heat exchanger has alternating enclosed channels or tubes of fluid. Had MRI intended the claims to be limited to specific heat exchangers, it could have easily included such language in the claims themselves. Instead, the claims merely state where the heat exchanger is

located and do not specify the structure of the heat exchanger.

Nor does the shared specification of the '740 and '142 patents limit the term "heat exchanger" to heat exchangers with enclosed channels or tubes.[2] The Background section of the specification indicates that the prior art used heat exchangers comprising fins. *Id.* at col. 2 ll. 1–2. Later, when describing the preferred embodiment, the specification suggests the invention can work with "heat exchangers" of all forms, stating that "many types of heat exchangers are known and can be used with any of the embodiments herein." *Id.* at col. 4 ll. 20–22. While the specification clearly discloses heat exchangers having alternating, enclosed paths or tubes, it does not require such structure. Instead, the specification states that the "heat exchanger" of the invention: (1) "may be a cross-flow, parallel flow, or counter-flow heat exchanger;" (2) "would be comprised of a plurality of stacked layers of thin plates;" and (3) "[t]he plates may have a corrugated honeycomb, or tubular design." *Id.* at col. 4 ll. 22–25 (emphasis added). Thus, the specification provides numerous examples of heat exchangers and does not require or specify one particular type.

MRI argues that the shared "specification repeatedly, consistently, and exclusively describes . . . a 'heat exchanger' with enclosed flow paths such as channels or tubes." Appellant's Br. 32 (cleaned up). However, as explained above, the shared specification does not "repeatedly, consistently, and exclusively" describe a heat exchanger with enclosed paths such as channels or tubes. Moreover, generally, "[i]t is not enough for a patentee to

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[2] The '740 and '142 patents share a specification. For simplicity, citations in this opinion will cite only to the specification of the '740 patent.

simply disclose a single embodiment or use a word in the same manner in all embodiments, the patentee must 'clearly express an intent' to redefine the term." *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citations omitted). Here, if MRI wanted to limit the claimed "heat exchanger" to "enclosed flow paths such as channels or tubes," it should have defined a "heat exchanger" as requiring these features.

Lastly, the prosecution history does not inform the public that the claimed "heat exchanger" must include alternating enclosed channels or tubes of fluid. MRI argues that two provisional applications in the chain of priority support its position.[3] First, MRI contends that we should adopt MRI's construction because the earlier provisional application, the '064 provisional, refers to a fin and not a heat exchanger, while the second provisional application, the '736 provisional, refers to a heat exchanger and discloses enclosed tubes and channels. Appellant's Br. 34–35. MRI argues that this shows that the inventor intended to distinguish between devices with fins and heat exchangers. Appellant's Br. 34. We are not convinced because it is not clear from either this sequence or the specifications of the provisional applications that this is necessarily so. MRI's other argument—relying on the specification of the '736 provisional—fares no better than the similar argument it makes above with respect to the shared specification.

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[3] Both the '740 and '142 patents claim priority from U.S. Provisional Application Nos. 61/033,064 (the "'064 provisional") and 61/138,736 (the "'736 provisional"). '740 patent col. 1 ll. 13–28; U.S. Patent No. 11,013,142 col. 1 ll. 19–33.

We conclude that the Board did not err in concluding that a heat exchanger may, but does not have to, include enclosed channels or tubes.

II

MRI challenges the Board's conclusion that the objective evidence of nonobviousness that MRI proffered is accorded "little to no weight." Appellant's Br. 44 (citations omitted). MRI offers the same arguments that this court considered and rejected in *Manufacturing Resources International, Inc. v. Squires*, No. 2024-2228, 2026 WL 879712 (Fed. Cir. Mar. 31, 2026). After considering MRI's arguments and the record on appeal, we see no error in the Board's analysis for the same reasons as in *Manufacturing Resources International*, 2026 WL 879712.

III

We have considered MRI's remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm the Board's decision that the challenged claims of the '740 and '142 patents would have been obvious.

AFFIRMED