United States Court of Appeals for the Federal Circuit

CHEMOURS COMPANY FC, LLC,
Appellant

v.

DAIKIN INDUSTRIES, LTD., DAIKIN AMERICA, INC.,
Appellees

ANDREW HIRSHFELD, PERFORMING THE FUNCTIONS AND DUTIES OF THE UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,
Intervenor

2020-1289, 2020-1290

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2018-00992, IPR2018-00993.

Decided: July 22, 2021

NITIKA GUPTA FIORELLA, Fish & Richardson, PC, Wilmington, DE, argued for appellant. Also represented by MARTINA TYREUS HUFNAL; TIMOTHY RAWSON, San Diego,

CA.

GREGORY A. CASTANIAS, Jones Day, Washington, DC, argued for appellees. Also represented by JOHN CHARLES EVANS, DAVID MICHAEL MAIORANA, Cleveland, OH; ANTHONY INSOGNA, San Diego, CA.

MONICA BARNES LATEEF, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, for intervenor. Also represented by THOMAS W. KRAUSE, MAUREEN DONOVAN QUELER, FARHEENA YASMEEN RASHEED.

Before NEWMAN, DYK, and REYNA, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* REYNA.

Opinion concurring in part and dissenting in part filed by *Circuit Judge* DYK.

REYNA, *Circuit Judge*.

Chemours Company FC, LLC, appeals the final written decisions of the Patent Trial and Appeal Board from two inter partes reviews brought by Daikan Industries, Ltd., et al. Chemours argues on appeal that the Board erred in its obviousness factual findings and did not provide adequate support for its analysis of objective indicia of nonobviousness. Chemours also argues that the Board issued its decision in violation of the Appointments Clause because the Board's decision came after this court's decision in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320, 1335 (Fed. Cir. 2019), but before this court issued its mandate. Chemours argues that the Board's decision should be

vacated and remanded.[1] We decline to vacate and remand this case pursuant to *Arthrex*. We conclude that the Board's decision on obviousness is not supported by substantial evidence and that the Board erred in its analysis of objective indicia of nonobviousness. Accordingly, we reverse.

BACKGROUND

This consolidated appeal arises from two final written decisions in inter partes reviews, *Daikin Industries Ltd. v. Chemours Co. FC, LLC*, No. IPR2018-00992 (P.T.A.B. Nov. 12, 2019), and *Daikin Industries Ltd. v. Chemours Co. FC, LLC*, No. IPR2018-00993 (P.T.A.B. Nov. 12, 2019). J.A. 1–129. Daikin Industries Ltd. and Daikin America, Inc. (collectively, "Daikin") filed a petition at the Patent Trial and Appeal Board ("Board") requesting an inter partes review of claims 1–7 of U.S. Patent No. 7,122,609 (the "'609 patent"). IPR2018-00992, J.A. 1–67. Daikin also filed a petition requesting an inter partes review of claims 3 and 4 of U.S. Patent No. 8,076,431[2] (the "'431 patent"). IPR 2018-00993, J.A. 68–129.

The '609 patent relates to a unique polymer for insulating communication cables formed by pulling wires through melted polymer to coat and insulate the wires, a process known as "extrusion."[3] '609 patent col. 3 ll. 50–63.

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[1] Following the Supreme Court's decision in *United States v. Arthrex, Inc.*, 141 S. Ct. 1970 (2021), Chemours withdrew its request to vacate and remand to the Board. ECF No. 66.

[2] The asserted claims include claims 3 and 4 because claims 1, 2, and 5–7 of the '431 patent were disclaimed. J.A. 3716.

[3] The specifications for both patents are nearly identical as are the issues on appeal for both patents. *See*

Specifically, Chemours's patents relate to a polymer with unique properties such that it can be formed at high extrusion speeds while still producing a high-quality coating on the communication cables. *Id.* Most relevant to the issues in this appeal, the claims provide that the polymer has a specific melt flow rate range, i.e., "a high melt flow rate of about 30±3 g/10 min," which is the rate at which melted polymer flows under pressure. '609 patent col. 10 ll. 19–20. The melt flow rate of a polymer is an indicator of how fast the melted polymer can flow under pressure, i.e., during extrusion. Appellant's Br. 3. The higher the melt flow rate, the faster the polymer can be coated onto a wire. J.A. 1150–1151 at ¶ 32. Claim 1 of the '609 patent is representative of the issues on appeal:

> 1. A partially-crystalline copolymer comprising tetrafluoroethylene, hexafluoropropylene in an amount corresponding to a hexafluoropropylene index (HFPI) of from about 2.8 to 5.3, said copolymer being polymerized and isolated in the absence of added alkali metal salt, having a melt flow rate of within the range of about 30±3 g/10 min, and having no more than about 50 unstable endgroups/10^6 carbon atoms.

'609 patent col. 10 ll. 15–21.

The Board found all challenged claims of the '609 patent and the '431 patent to be unpatentable as obvious in view of U.S. Patent No. 6,541,588 ("Kaulbach"). J.A. 66, 345–51.

Chemours appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

Appellant's Br. 2 n.1. When referencing both patents, this opinion will cite to the '609 patent and IPR2018-00992, J.A. 1-67.

STANDARD OF REVIEW

This court reviews the Board's legal determinations de novo and its factual determinations for substantial evidence. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1379 (Fed. Cir. 2016). Substantial evidence requires more than a "mere scintilla" and must be enough such that a reasonable mind could accept the evidence as adequate to support the conclusion. *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938).

Obviousness is a question of law based on underlying findings of fact. *See In re NuVasive, Inc.*, 842 F.3d at 1381. "What the prior art teaches, whether a person of ordinary skill in the art would have been motivated to combine references, and whether a reference teaches away from the claimed invention are questions of fact." *Meiresonne v. Google, Inc.*, 849 F.3d 1379, 1382 (Fed. Cir. 2017) (quoting *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047–48 (Fed. Cir. 2016) (en banc)).

In making its factual findings, the Board must have both an adequate evidentiary basis for its findings and articulate a satisfactory explanation for those findings. *NuVasive*, 842 F.3d at 1382 (citing *In re Lee*, 277 F.3d 1338, 1344 (Fed. Cir. 2002) and S*ynopsys, Inc. v. Mentor Graphics Corp.*, 814 F.3d 1309, 1322 (Fed. Cir. 2016)). We review for substantial evidence the underlying factual findings leading to an obviousness conclusion. *Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc.*, 853 F.3d 1272, 1278 (Fed. Cir. 2017).

DISCUSSION

We first address Chemours's argument concerning this court's decision in *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320, 1335 (Fed. Cir. 2019).

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