NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

PURADIGM, LLC,
Plaintiff-Appellant

v.

DBG GROUP INVESTMENTS LLC, AP SCIENCES GROUP, LLC, FKA ACTIVEPURE TECHNOLOGIES, LLC, ACTIVEPURE MEDICAL LLC, AERUS LLC, AERUS FRANCHISING LLC, ARS HOME SOLUTIONS LLC, AERUS ENTERPRISE LLC, VOLLARA LLC, VOLLARA CONCEPTS LLC,
Defendants-Appellees

2024-2299

Appeal from the United States District Court for the Northern District of Texas in No. 3:23-cv-00216-B, Judge Jane J. Boyle.

Decided: April 1, 2026

SCOTT P. MCBRIDE, McAndrews, Held & Malloy, Ltd., Chicago, IL, argued for plaintiff-appellant. Also represented by CHRISTOPHER V. CARANI, CHRISTIAN HAVEL HALLERUD, ANDREW B. KARP, GREGORY SCHODDE.

CHAD EDWARD NYDEGGER, Workman Nydegger, Salt Lake City, UT, argued for defendants-appellees. Also represented by RYAN C. MORRIS.

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

PROST, *Circuit Judge*.

Puradigm, LLC ("Puradigm") sued defendants-appelles, including DBG Group Investments LLC ("DBG"), in the U.S. District Court for the Northern District of Texas for infringing U.S. Patent No. 8,585,979 ("the '979 patent"). The district court found the scope of the '979 patent to be limited by prosecution history disclaimer and granted summary judgment of noninfringement. *Puradigm, LLC v. DBG Grp. Invs., LLC*, No. 3:23-cv-216, 2024 WL 3997489, at *10 (N.D. Tex. Aug. 29, 2024). For the following reasons, we affirm.

BACKGROUND

I

The '979 patent relates to photo-catalytic cells used for air purification. '979 patent Abstract. The patent consists of two sheets of drawings and a two-page written description. It explains that in typical photo-catalytic cells, ultraviolet ("UV") light from an emitter strikes a catalyst-coated target, producing ions that can eliminate contaminants in the air. *Id.* at col. 1 ll. 12–28. The '979 patent aims to enhance such cells so that "a higher proportion of UV energy . . . can be caused to impinge upon the [target]." *Id.* at col. 1 ll. 34–36. This is done by adding "reflective surfaces" having "unique reflective specifications." *Id.* at col. 1 ll. 48–51.

As explained, not just any reflective surface will do:

> [I]t is important that reflecting surfaces of the UV reflector 22 produce surface specular reflection.

> (Specular reflection being a "mirror-like reflection" of light—in which a single incoming light ray is reflected into a single outgoing direction[.]) Specular reflection is distinct from "diffuse" reflection where an incoming light ray is reflected into a broad range of directions. Diffuse reflection may diminish performance enhancement of the photo-catalytic cell 10.

Id. at col. 3 ll. 36–44. The '979 patent also explains that, to achieve the above-quoted specification, "it may be necessary to 'micro-polish or buff' a selected material[']s reflective surface." *Id.* at col. 3 ll. 27–30.

II

During prosecution, the examiner rejected the claims on the basis that Bigelow[1] disclosed the claimed "specular UV reflector." J.A. 2444–45. The applicant (who later assigned the '979 patent to Puradigm) disagreed, stating "[n]owhere in Bigelow is anything regarding a specular reflector disclosed—either expressly or inherently." J.A. 2527.

The examiner was unconvinced, however, and continued to reject the claims reciting a "specular UV reflector" based on Bigelow. *See* J.A. 2548–49. The examiner remarked that Bigelow's "polished aluminum reflector is a reflector that produces a mirror[-]like reflection" and therefore, "Bigelow discloses a specular UV reflector." J.A. 2556. The applicant then amended the claims to recite additional features, but it did not remove the "specular UV reflector" limitation and said nothing more about it in its response. J.A. 2576–96. The applicant also stated that, with respect to the examiner's statements that Bigelow discloses a

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[1] U.S. Patent No. 6,500,387 ("Bigelow").

specular UV reflector, the applicant "neither agrees nor disagrees with such statements." J.A. 2594.

After further amendments, the examiner ultimately allowed the claims because they included "a first *specular UV reflector* . . . and a second *specular UV reflector*," both being "configured to reflect UV energy . . . *directly to* the photo-catalytic coating" of the first and second targets. J.A. 2735–36 (emphasis added).

Claim 1 of the '979 patent recites in relevant part:

> 1. An apparatus for ionizing air, the apparatus comprising: . . .
>
> a first reflector arranged on the top portion of the chamber and configured to:
>
> > reflect UV energy emitted along a dimension towards the first target from a UV emitter located within the chamber directly to the photo-catalytic coating of the first target, wherein the first reflector is a specular UV reflector, and
> >
> > reflect UV energy emitted along a dimension towards the second target from the UV emitter directly to the photo-catalytic coating of the second target;
>
> a second reflector arranged on the bottom portion of the chamber and configured to:
>
> > reflect UV energy emitted along a dimension towards the first target from the UV emitter located within the chamber directly to the photo-catalytic coating of the first target, wherein the second reflector is a specular UV reflector, and
> >
> > reflect UV energy emitted along a dimension towards the second target from the UV

> emitter directly to the photo-catalytic coating of the second target; . . . .

'979 patent claim 1.

III

Puradigm asserted the '979 patent against DBG, accusing certain DBG air-purification products of infringement. DBG sought, and was granted, leave to file an early summary judgment motion arguing that the '979 patent is either not infringed or is invalid. Puradigm also sought, and was granted, leave to amend its complaint to modify its list of accused products. The district court denied without prejudice DBG's summary-judgment motion as moot in light of the amended complaint. Thereafter, DBG filed a renewed summary-judgment motion. *Puradigm*, 2024 WL 3997489, at *2. The court granted the motion as to noninfringement, finding that "[t]he prosecution history contains a clear disclaimer of polished aluminum because it is not sufficiently 'specular,' or 'mirror-like'" to meet the claimed specular UV reflector. *Id.* at *9–10. "As a result, DBG's unpolished aluminum reflectors are also disclaimed from the scope of 'specular UV reflector' in [c]laim 1." *Id.* at *10. Thus, the court concluded that no genuine dispute of material fact precluded granting summary judgment of noninfringement for DBG.

Puradigm timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

On appeal, Puradigm makes two arguments: (1) there was no prosecution history disclaimer; and (2) the district court did not properly construe "specular UV reflector." We address each in turn.

I

"Whether prosecution history disclaimer applies is a legal question" that we review de novo. *Ecolab, Inc. v. FMC*

Corp., 569 F.3d 1335, 1342 (Fed. Cir. 2009). A "clear and unmistakable surrender of subject matter" is needed to trigger disclaimer. *Id.* (quoting *Bayer AG v. Elan Pharm. Rsch. Corp.*, 212 F.3d 1241, 1251 (Fed. Cir. 2000)). As discussed below, we conclude that prosecution history disclaimer applies.

A

We agree with DBG and the district court that the applicant made a clear and unmistakable disclaimer during prosecution. The examiner rejected the applicant's claims reciting a "specular UV reflector" as anticipated by Bigelow, which discloses its reflective surfaces (baffles and chamber walls) being made from polished aluminum to enhance UV irradiation. Facing this rejection, the applicant argued that "[*n*]*owhere* in Bigelow is *anything* regarding a specular reflector disclosed—either expressly *or inherently*." J.A. 2527 (emphasis added). The applicant's position was clear: Bigelow does not explicitly describe its materials being specular UV reflectors (i.e., expressly), nor do the materials themselves possess the properties necessary for them to be considered specular UV reflectors (i.e., inherently); thus "[n]owhere in Bigelow" is a specular UV reflector disclosed. *Id.*

When read in the context of the '979 patent and its entire prosecution history, the scope and significance of the applicant's disclaimer statements come into even sharper focus. The '979 patent seeks to enhance the performance of photo-catalytic cells by capturing and using UV energy that might be lost because it never reaches the intended target. '979 patent col. 1 ll. 34–37. Nearly the entirety of the limited disclosure of the '979 patent focuses on the purported ability of its reflectors to do so. *See, e.g.*, *id.* at col. 2 ll. 21–25 (The invention can "increase a proportion of emitted UV energy that strikes [the target]."); *id.* at col. 3 ll. 6–11 (The "presence of the reflectors 22-3 may result in avoidance of loss of UV energy that might otherwise be

absorbed or diffused by walls of the chamber 18."). To achieve the performance enhancement sought, the patent emphasizes the importance of its "unique" specular UV reflectors exhibiting "mirror-like" reflection as opposed to "diffuse" reflection. *Id.* at col. 3 ll. 37–43. As "[d]iffuse reflection may diminish performance enhancement of the photo-catalytic cell 10," a reflector that does not produce sufficient specular reflection (and instead produces too much diffuse reflection) would be antithetical to the '979 patent. *Id.* at col. 3 ll. 43–44.

Indeed, the claims of the '979 patent were only allowed once they were amended to recite both: (1) the first and second reflectors are "specular UV reflectors"; and (2) the first and second reflectors are each configured to "reflect UV energy . . . *directly to* the photo-catalytic coating" of the first and second targets. *Id.* at claim 1 (emphasis added). In combination with the "specular" nature of the reflectors, this directional relationship further confirms that a crucial aspect of the claimed invention is the specular UV reflectors producing mirror-like reflection of light, as opposed to diffuse reflection, so that a higher proportion of light reaches the targets.

Diffuse reflection, in the applicant's own words, diminishes performance because light rays are distributed in a "broad range of directions," rather than a single outgoing direction. *Id.* at col. 3 ll. 37–44. Due to their indiscriminate scattering, diffuse reflectors would hinder the directing of light to the intended target. This point is driven home by the applicant's attempt to distinguish Bigelow for lacking specular UV reflectors. Although Bigelow's reflectors undoubtedly reflect some UV light, they do not, according to the applicant, possess the inherent properties necessary to be considered specular UV reflectors. J.A. 2527. One of ordinary skill in the art, reviewing this prosecution history, would thus conclude that the applicant considered Bigelow's reflectors to produce too much diffuse reflection to be specular UV reflectors.

B

Puradigm first argues that because the examiner rejected the applicant's attempt to distinguish Bigelow, there was no disclaimer. This argument is unpersuasive.

"An applicant's argument made during prosecution may lead to a disavowal of claim scope even if the [e]xaminer did not rely on the argument." *Seachange Int'l, Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1374 (Fed. Cir. 2005). Thus, even if the examiner rejected the applicant's initial attempt to distinguish Bigelow, it does not necessarily follow that we must disregard the applicant's statements. As discussed above, considering the '979 patent and its prosecution history as a whole, the applicant made a clear and unmistakable disclaimer with respect to Bigelow. Indeed, "the interested public has the right to rely on the inventor's statements made during prosecution, without attempting to decipher whether the examiner relied on them, or how much weight they were given." *Fenner Invs., Ltd. v. Cellco P'ship*, 778 F.3d 1320, 1325 (Fed. Cir. 2015).

Puradigm argues that it would be inequitable to apply prosecution history disclaimer because the examiner rejected the applicant's urging for a narrower construction of "specular UV reflector." Appellant's Br. 13–14 (citing *Power Integrations, Inc. v. ON Semiconductor Corp.*, 396 F. Supp. 3d 851 (N.D. Cal. 2019)). Not only does *Power Integrations* not bind us, but it also presents different facts. Here, the examiner's basis for allowance of the claims was not completely independent from the applicant's earlier argument. *See Power Integrations*, 396 F. Supp. 3d at 865–66 (distinguishing cases where the examiner "reli[ed] on some alternative argument made by the patentee"). Instead, the examiner allowed the claims because they recited first and second reflectors being "specular UV reflector[s]" *and* that both are configured to reflect UV energy "directly to the photo-catalytic coating" of the first and second targets. J.A. 2735–36. As explained above, the ability of the

claimed reflectors to reflect UV energy "directly to" their intended target necessarily depends on their specular nature, a quality the applicant insisted was lacking in Bigelow. We cannot be sure from this record that the applicant's disclaimer statements regarding Bigelow had no effect on the examiner.

What is clear, however, is that the applicant's statements in distinguishing its specular UV reflectors from the polished aluminum reflectors of Bigelow were deliberate and definitive: "[n]owhere in Bigelow is anything regarding a specular reflector disclosed—either expressly or inherently." J.A. 2527. "It is well settled . . . that it is the applicant, not the examiner, who must give up or disclaim subject matter that would otherwise fall within the scope of the claims." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1124 (Fed. Cir. 2004). Focusing on the applicant's conduct, we hold that the applicant made a clear and unmistakable disclaimer during prosecution.

C

Next, Puradigm argues that the applicant acquiesced to the examiner's position that Bigelow discloses specular UV reflectors, thus negating any disclaimer made in distinguishing Bigelow. That argument, too, is unpersuasive.

Analyzing the prosecution history as a whole, we may consider whether the applicant "retracted any of his statements distinguishing [the prior art]" or whether he "acquiesced in the examiner's comments." *Springs Window Fashions LP v. Novo Indus., L.P.*, 323 F.3d 989, 995 (Fed. Cir. 2003). Here, the applicant did neither.

After stating that "[n]owhere in Bigelow is anything regarding a specular reflector disclosed—either expressly or inherently," the applicant never retracted this statement. *See* J.A. 2527–2750. Nor did the applicant acquiesce to the examiner's position—that Bigelow's polished aluminum

meets the claimed specular UV reflector—simply by pursuing its original argument no further. Instead, the applicant responded that it "neither agrees nor disagrees with such statements and explicitly reserves the right to challenge such statements in the future should the need arise." J.A. 2594. Thus, the applicant explicitly chose *not* to agree with the examiner. In later rounds of prosecution, the applicant went on to distinguish other prior art and make further amendments relating to the claimed reflectors but never revisited this point. Such conduct cannot constitute acquiescence.

Puradigm argues this case is like *Malvern Panalytical Inc. v. TA Instruments-Waters LLC*, 85 F.4th 1365 (Fed. Cir. 2023), and *Ecolab*, 569 F.3d 1335. But those cases are distinguishable. In the circumstances of *Malvern*, "where an applicant abandon[ed] its unsuccessful argument" in the prosecution of an unrelated (but commonly assigned) application and overcame the rejection on other grounds, we concluded that "the prosecution history lack[ed] the clarity necessary to establish prosecution disclaimer." 85 F.4th at 1376. And in *Ecolab*, we held that the prosecution history was not clear and unmistakable enough to invoke disclaimer because a reasonable reader of the prosecution history could conclude the applicant's initial statements were in error, the examiner corrected them, and the applicant later recognized the error. 569 F.3d at 1343. Unlike those cases, our review of the prosecution history as a whole in this case yields the conclusion that the applicant clearly and unmistakably disclaimed Bigelow's polished aluminum reflectors from the scope of its claimed specular UV reflectors. There is no indication in this record that the applicant recognized its characterization of Bigelow's polished aluminum as *not* being specular UV reflectors was somehow in error. The fact that prosecution may have shifted to a different but related concept of the claimed specular UV reflectors reflecting UV energy "directly to" the photo-catalytic coating of the first and second

targets does not blunt the impact of the applicant's earlier remarks. *See Springs Window*, 323 F.3d at 995.

II

Finally, Puradigm argues that the district court erred by providing only a partial construction of "specular UV reflector" and declining to adopt Puradigm's construction. Puradigm is effectively disputing the scope of the disclaimer found by the district court, i.e., that "DBG's unpolished aluminum reflectors are also disclaimed from the scope of 'specular UV reflector.'" *Puradigm*, 2024 WL 3997489, at *10. The district court applied this scope in making its summary judgment ruling. *Id.* We see no error in the district court's analysis, which was sufficient to resolve the dispute before it.

Puradigm acknowledged that "for summary judgment, it was not disputed[] that the accused device has a reflector made of unpolished aluminum." Appellant's Br. 7 (footnote omitted). Because the applicant for the '979 patent disclaimed Bigelow's polished aluminum reflectors, as explained above, the only remaining question is whether as a matter of law this disclaimer covers *un*polished variants of the same material—aluminum. We hold that it does.

The '979 patent and prosecution history make clear that the property of specular UV reflectors enabling them to send UV energy "directly to" the photo-catalytic coating of the first and second targets is that they produce mirror-like reflection, as opposed to diffuse reflection "where an incoming light ray is reflected into a broad range of directions." '979 patent col. 3 ll. 37–44. One way to achieve this is "to 'micro-polish or buff' a selected material[']s reflective surface." *Id.* at col. 3 ll. 27–30.

The undisputed evidence of record establishes that a *less* polished or *un*polished surface would produce more diffuse reflection and less specular reflection than a polished one. Even Puradigm's expert acknowledges that a given

material's surface roughness "can lead to scattering and diffuse reflection of radiation." J.A. 2913 (Milster declaration). Puradigm cannot reasonably dispute that unpolished aluminum (as in the accused products) is rougher than polished aluminum (as in Bigelow). The rougher the surface, the more diffuse (and less specular) reflection would be produced. Thus, the applicant's disclaimer of Bigelow's polished aluminum reflectors logically extends to unpolished reflectors of the same material. In these circumstances, no reasonable juror could find the accused products to be encompassed by the claims.

CONCLUSION

We have considered Puradigm's remaining arguments and find them unpersuasive. For the foregoing reasons, we affirm.

AFFIRMED