NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

CAO LIGHTING, INC.,
Plaintiff-Appellant

v.

FEIT ELECTRIC COMPANY, INC.,
Defendant-Appellee

2023-1906

Appeal from the United States District Court for the Central District of California in No. 2:20-cv-04926-AB-SP, Judge André Birotte, Jr.

Decided: October 16, 2024

RONALD E. CAHILL, Barnes & Thornburg LLP, Boston, MA, argued for plaintiff-appellant. Also represented by HEATHER B. REPICKY; TODD VARE, Indianapolis, IN.

RYAN DYKAL, Boies Schiller Flexner LLP, Washington, DC, argued for defendant-appellee. Also represented by MARK SCHAFER; MAXWELL C. MCGRAW, Shook, Hardy & Bacon, LLP, Kansas City, MO; AMELIA ELIZABETH MURRAY, Chicago, IL.

Before DYK, STOLL, *Circuit Judges*, and MURPHY, *District Judge*.[1]

Dyk, *Circuit Judge*.

CAO Lighting, Inc. ("CAO Lighting"), the owner of U.S. Patent No. 6,465,961 ("the '961 patent"), brought suit against Feit Electric Company, Inc. ("Feit Electric") for infringement of claim 21 of the '961 patent. The District Court for the Central District of California granted summary judgment of non-infringement, and CAO Lighting appeals. Because the judgment of non-infringement is based on an improper construction requiring the recited "first reflective layer" to be an epitaxial layer, and the district court also erred in requiring the first reflective layer and the substrate to be composed of different materials, we vacate the judgment and remand for further proceedings consistent with this opinion.

BACKGROUND

The '961 patent concerns a semiconductor light source that can illuminate a space and efficiently dissipate heat. '961 patent, Abstract; *id.* at col. 1, ll. 46–58. The patent explains that these light sources may use a variety of semiconductors, such as a light emitting diode ("LED") chip, laser arrays, an array of chips, or a vertical-cavity surface-emitting laser ("VCSEL") chip. *Id.* at Abstract.

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[1] Honorable John F. Murphy, District Judge, United States District Court for the Eastern District of Pennsylvania, sitting by designation.

Relevant here, claim 21 depends from cancelled claim 8, which in turn depends from cancelled claim 7 of the '961 patent.[2]

Claim 7 recites:

> 7. A device as recited in claim 1 wherein said chip includes
>
> a substrate on which epitaxial layers are grown,
>
> a buffer layer located on said substrate, said buffer layer serving to mitigate differences in material properties between said substrate and other epitaxial layers,
>
> a first cladding layer serving to confine electron movement within the chip, said first cladding layer being adjacent said buffer layer,
>
> an active layer, said active layer emitting light when electrons jump to a valance state,
>
> a second cladding layer, said second cladding layer positioned so that said active layer lies between cladding layers, and

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[2] The '961 patent originally issued on October 15, 2002 with twenty claims. The original claims, including claims 7 and 8, were later subject to *inter partes* and *ex parte* reexamination proceedings. As a result of those proceedings, the original claims were cancelled, and new claims 21–103 were added.

> a contact layer on which an electron may be mounted for powering said chip.

'961 patent, col. 10, ll. 28–43 (emphasis added). Claim 8 recites:

> 8. A device as recited in claim 7 further comprising a first and a second reflective layers, each of said first and second reflective layers being located on opposite sides of said active layer, said reflective layers serving to reflect light emitted by said active layer.

Id., col. 10, ll. 44–48 (emphasis added). Claim 21 recites:

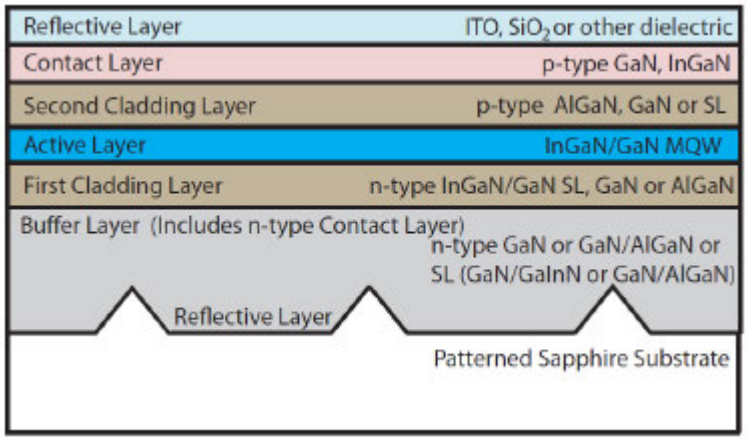
> 21. The semiconductor light source as recited in claim 8 wherein:
>
> > said at least one semiconductor chip is a light emitting diode (LED) chip configured to output light at greater than about 40 milliwatts, and
> >
> > said LED chip is configured to emit monochromatic visible light.

Id., Ex Parte Reexamination Certificate at col. 1, ll. 32–38.

During claim construction, the parties requested the construction of the term "reflective layers" in claim 8. In its September 1, 2021 *Markman* order, the district court construed the term as "distinct layers of material that reflect light emitted by said active layer." The district court explained that the reference to "distinct layers" in its construction means the first reflective layer and second reflective layer must be distinct. The parties do not dispute this construction on appeal.

After claim construction and expert discovery, Feit Electric moved for summary judgment of non-infringement. CAO Lighting contended that Feit Electric's

accused products have LED chips with the following basic structure:



The parties appeared to agree that the upper reflective layer in this schematic was a second reflective layer, but they disputed whether the lower reflective layer was a claimed first reflective layer.

Feit Electric made two arguments in support of summary judgment of non-infringement with respect to the first reflective layer. It first argued that CAO Lighting did not identify a "distinct layer of material" as the first reflective layer. Instead, CAO Lighting identified the interface or boundary between the patterned sapphire substrate and the buffer layer, which Feit Electric contended was not a distinct layer as required by the district court's claim construction. This argument, rejected by the district court, is not pressed on appeal, and we need not discuss it further.

CAO Lighting ultimately argued that it had identified a distinct layer—the patterned portion of the sapphire substrate (denoted by the cones in the schematic)—as the first reflective layer. Feit Electric replied that because claims 7 and 8 of the '961 patent identify the substrate and first reflective layer as separate limitations, the substrate

of claim 7 cannot then be the first reflective layer of claim 8.

On December 13, 2022, the district court ordered supplemental briefing on claim construction as to the meaning of both "a substrate on which epitaxial layers are grown" and "epitaxial layers." Following that briefing, the court rejected Feit Electric's argument that the substrate and first reflective layer must be separate components but held that the first reflective layer must be an epitaxial layer that is grown on or above the substrate. Then, it *sua sponte* construed the term "other epitaxial layers" as used in claim 7 and found that the substrate and first reflective layer must be different materials. Subsequently, the court granted summary judgment of non-infringement on the ground that the substrate and first reflective layer of the accused products are not different materials.

CAO Lighting appeals. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

I

We review the district court's grant of summary judgment de novo. *Sound View Innovations, LLC v. Hulu, LLC*, 33 F.4th 1326, 1335 (Fed. Cir. 2022); *Munden v. Stewart Title Guar. Co.*, 8 F.4th 1040, 1044 (9th Cir. 2021); *Greater Yellowstone Coal. v. Lewis*, 628 F.3d 1143, 1148 (9th Cir. 2010).

II

CAO Lighting first argues that the district court erred in concluding that the "first reflective layer" must be an epitaxial layer. Claim construction is a question of law with underlying questions of fact. *See Teva Pharms. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 320 (2015). Where the district court relies only on intrinsic evidence to construe

the claims, as it has done here, we review the construction de novo. *Id.* at 331.

Claim construction begins with the words of the claim. Claims are generally given their ordinary and customary meaning that is the meaning understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc).

In this case, the district court construed the "first reflective layer" as an epitaxial layer by first noting that claim 7 lists several layers, which it understood to be grown on the substrate (i.e., epitaxial), and then concluding that "the device of claim 8 may 'further comprise' a 'first reflective layer' in the sense that an additional layer is added to the substrate of [c]laim 7." J.A. 8. We disagree with the court's construction. Claim 8 simply recites that "a first and a second reflective layers [are] located on opposite sides of said active layer" and "serv[e] to reflect light." '961 patent, col. 10, ll. 44–48. Nowhere does this language limit the reflective layers to epitaxial layers or to layers grown on or above the substrate.

When read as a whole, claims 7 and 8 demonstrate that the reflective layers need not be epitaxial. We have explained that "[d]ifferences among claims can . . . be a useful guide in understanding the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314; *see also Ancora Techs., Inc. v. Apple, Inc.*, 744 F.3d 732, 735 (Fed. Cir. 2014) (explaining that the difference in terminology between two claims "tends to reinforce, rather than undermine, adoption of the broad ordinary meaning" of a disputed claim term). Here, claim 7 recites "a substrate on which *epitaxial* layers are grown," '961 patent, col. 10, l. 30 (emphasis added), demonstrating that the inventor knew how to describe and restrict layers to be epitaxial layers. Claim 8, in contrast, lacks a similar modifier of the

reflective layers and instead simply recites "a first and a second reflective layers." In such cases where two claims recite different terms, we have declined to limit the broader claim to the narrower embodiment. *See Ancora Techs.*, 744 F.3d at 735 (declining to narrow the term "program" to "application programs" where the disputed claim only recited a program and another claim referred to an application software program); *Kara Tech. Inc. v. Stamps.com Inc.*, 582 F.3d 1341, 1347 (Fed. Cir. 2009) (finding that disputed terms do not require the use of a "key" because the claims at issue did not recite the term while other claims did).

Feit Electric, in support of the district court's claim construction, argues that the only discussion of reflective layers in the '961 patent is within the context of the VCSEL chip referenced in the specification, where reflective layers are described and depicted as epitaxial. *See* '961 patent, col. 5, ll. 38–47, *id.* at col. 6, ll. 1–8; *id.* at Figs. 3f, 3h. But the chip at issue here is not a VCSEL chip, and there is nothing in the specification that limits the claims to a VCSEL chip. Nor does the specification, in depicting the reflective layers of the VCSEL chip as epitaxial, state that reflective layers must be epitaxial.

Our case law has repeatedly "cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1346–47 (Fed. Cir. 2015) (quoting *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1328 (Fed. Cir. 2002)); *see also Phillips,* 415 F.3d at 1323. Even in the case where the specification describes only a single embodiment, we will not limit the claims to that embodiment "unless the specification makes clear that 'the patentee . . . intends for the claims and the embodiments in the specification to be strictly coextensive.'" *JVW Enters., Inc. v. Interact Accessories, Inc.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (quoting *Phillips*,

415 F.3d at 1323). Neither the district court nor Feit Electric identifies any language in the claims, specification, or the prosecution history that demonstrates the inventors intended to limit the reflective layers to the VSCEL embodiment or that the reflective layers must be epitaxial layers. We conclude that the first reflective layer need not be epitaxial.

III

Based on its erroneous construction of "reflective layers" as epitaxial, the district court concluded that "other epitaxial layers" as recited in claim 7 must refer to the epitaxial layers grown on the substrate, which it had concluded encompassed the reflective layers of claim 8. It further explained that "[b]ecause claim 7 requires a buffer" and because, as recited by claim 7, the buffer layer mitigates differences in material properties between the substrate and other epitaxial layers, "claim 7 contemplates that the substrate and . . . the 'first reflective layer,' comprise different materials." J.A. 10. The district court's construction requiring different materials thus turns on its requirement that the first reflective layer must be an epitaxial layer. Because we hold that the first reflective layer need not be an epitaxial layer, it follows that the district court's construction requiring the first reflective layer and the substrate to comprise different materials is incorrect.[3]

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[3] CAO Lighting argues on appeal that the district court's grant of summary judgment violated Rule 56 and its due process rights as CAO Lighting was not given the opportunity to argue non-infringement under a construction requiring the first reflective layer and substrate be different materials. Having vacated the district court's grant of non-infringement, we need not reach the merits of CAO Lighting's argument.

IV

Feit Electric argues that the non-infringement decision can nonetheless be affirmed on two alternative grounds. First, Feit Electric argues that the patterned substrate cannot be the first reflective layer because it is not an epitaxial layer. We decline to affirm summary judgment under this alternative theory as it relies on the now rejected claim construction that the first reflective layer is an epitaxial layer.

Second, Feit Electric argues that the patterned substrate cannot be a first reflective layer because the first reflective layer and substrate cannot be satisfied by the same component. Notably, the substrate and the first reflective layer are in different claims—the substrate is recited in claim 7 and the first reflective layer is recited in claim 8. And in claim 8, the reflective layers are preceded by the preamble "[a] device as recited in claim 7 further comprising[.]" '961 patent, col. 10, ll. 44–45. Citing *Becton, Dickinson & Co. v. Tyco Healthcare Group*, 616 F.3d 1249, 1254 (Fed. Cir. 2010), Feit Electric argues here as it did in the district court that because the substrate and first reflective layer are listed separately, this creates a "clear implication" that the two elements are distinct. The district court disagreed, stating:

> The Court finds that the 'first reflective layer' and 'substrate' need not be distinct components[.] . . . *[T]he 'first reflective layer' must be an epitaxial layer grown on the substate* [sic]. The parties explain that the 'first reflective layer' would be a crystalline growth on the substrate wherein the crystalline growth is controlled by the substrate . . . the crystal growth here suggests the first reflective layer and substrate may be the same component.

J.A. 9–10 (emphasis added). The district court's conclusion again relied on its erroneous understanding that the first reflective layer must be an epitaxial layer. Under these circumstances, we think a remand is necessary to give the parties an opportunity to address the issues without regard to the district court's erroneous claim construction.

CONCLUSION

For the foregoing reasons, we *vacate* the district court's claim construction of "first reflective layer" requiring that it be an epitaxial layer and that the first reflective layer and substrate be different materials. We also *vacate* the court's grant of summary judgment on non-infringement and *remand* for further proceedings consistent with this opinion.

VACATED AND REMANDED.

COSTS

Costs to Plaintiff-Appellant.