

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

MAQUET CARDIOVASCULAR LLC,
Plaintiff-Appellant

v.

**ABIOMED INC., ABIOMED R&D, INC., ABIOMED
EUROPE GMBH,**
Defendants-Appellees

2023-2045

Appeal from the United States District Court for the
District of Massachusetts in No. 1:17-cv-12311-FDS, Judge
F. Dennis Saylor, IV.

Decided: March 21, 2025

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sented by SHARONMOYEE GOSWAMI, ANDREI HARASYMIAK,
LAUREN MOSKOWITZ.

Before REYNA, TARANTO, and CUNNINGHAM, *Circuit Judges*.

REYNA, *Circuit Judge*.

Maquet Cardiovascular LLC appeals a judgment from the United States District Court for the District of Massachusetts that appellees Abiomed Inc., Abiomed R&D, Inc., and Abiomed Europe GmbH do not infringe certain claims of U.S. Patent No. 10,238,783. Maquet does not challenge the district court's judgment of non-infringement of U.S. Patent No. 9,789,238.

Below, the district court entered final judgment based on the parties' stipulation of non-infringement in light of the district court's construction of certain claims of the '783 patent. Because we determine that the district court misconstrued the claim terms at issue, we reject its constructions, vacate, and remand as to the '783 patent. We leave the judgment as to the '238 patent undisturbed.

BACKGROUND

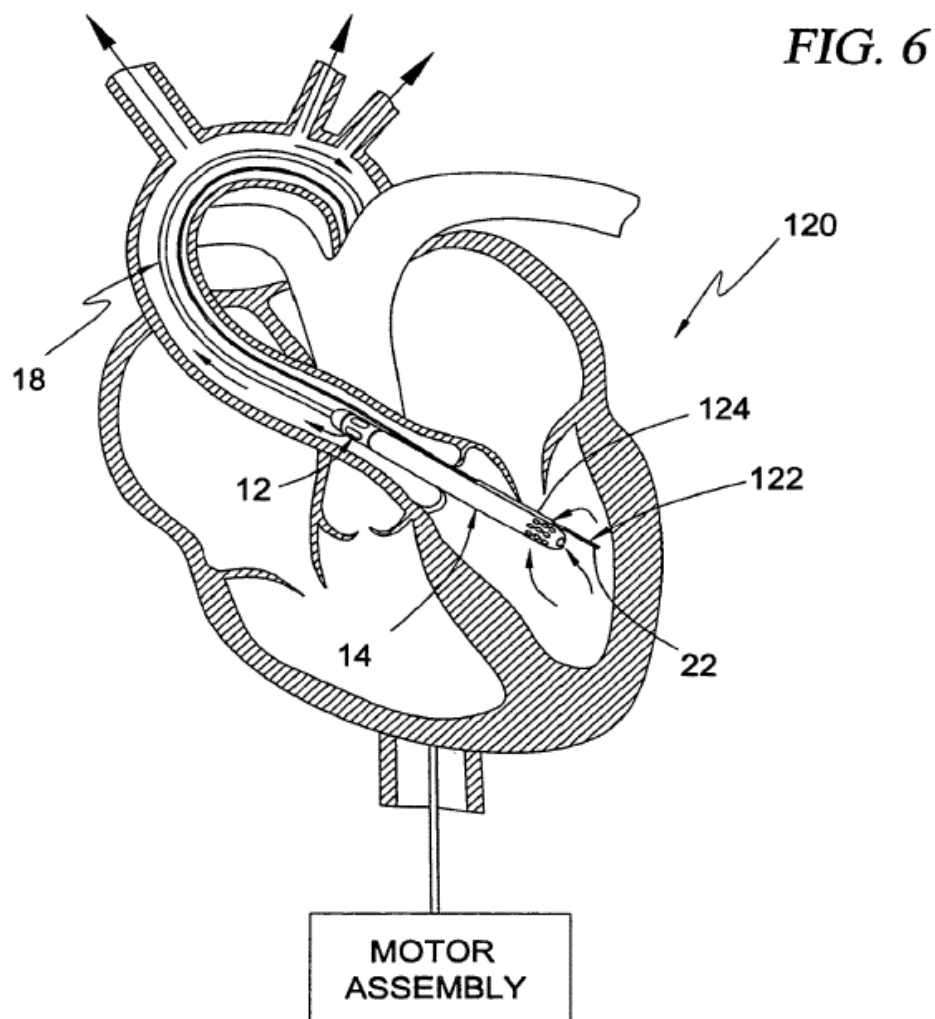
I

Appellant Maquet Cardiovascular LLC ("Maquet") owns U.S. Patent No. 10,238,783 ("783 patent"). This patent relates to an intravascular blood pump system for deploying a blood pump to a desired location in a patient's circulatory system. *See, e.g.*, J.A. 130, 1:29–33. The '783 patent explains that prior art pumps were "difficult to guide into the appropriate position within the circulatory system of a patient." *Id.* at 2:20–25. This was in part because the patient's blood pump was guided by "supplemental guiding mechanisms," such as a separate, large diameter guide catheter, that were "incapable of providing the degree of control necessary to easily negotiate the pump through the tortuous pathways leading up to and into the heart." *See id.* at 2:25–37; 3:1–3. Such catheters were also disadvantageous because they consumed valuable space within the vessels. *Id.* at 2:45–55.

The '783 patent sought to improve intravascular pump systems by eliminating the need for supplemental guide mechanisms by employing “integrated guide mechanisms” that are located on the device itself. J.A. 130, 1:31–33; *id.* at 2:35–37; *id.* at 2:62–66. The '783 patent discloses three examples of such integrated guide mechanisms. The first is an “over-the-wire” type guide mechanism where a “central lumen is formed through at least a portion of the intravascular blood pump system such that a guide element, such as a guide wire, may be progressed therethrough and advanced to the predetermined location in the circulatory system of the patient.” J.A. 131, 3:7–14. The second is a “side-rigger” or “rapid exchange” type guide mechanism, in which “a side lumen is formed along a length of at least one of the intravascular blood pump and the cannula” through which a “guide element, such as a guide wire, may be advanced to the predetermined location in the circulatory system of the patient.” *Id.* at 3:22–29. The final is a “guide catheter” type guide mechanism, which includes a “conduit assembly” with a “guide catheter” and a “pump assembly.” *Id.* at 3:34–54.

Figure 6 of the '783 patent, reproduced below, depicts the “side-rigger” guide mechanism, with a blood pump (12),

a cannula (14), a guide mechanism (122), and a guide wire (22). J.A. 136, 14:11–21.

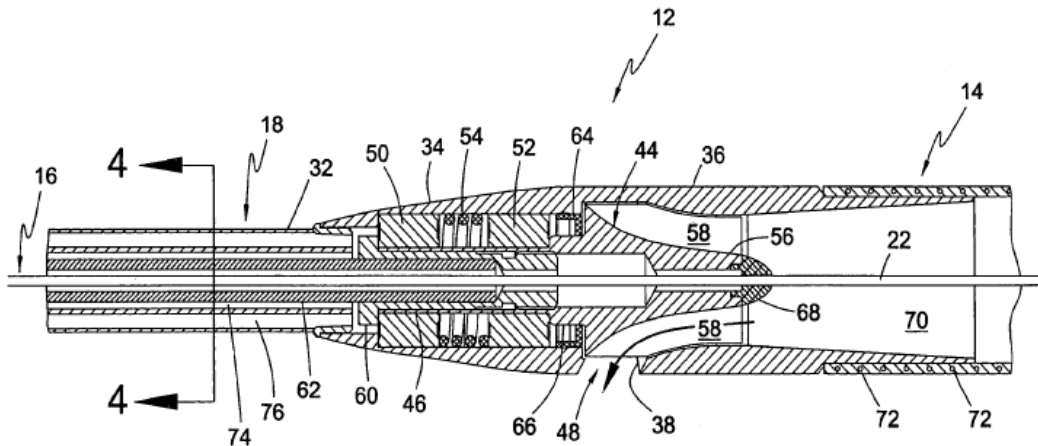


J.A. 98, Fig. 6.

Figure 3, reproduced below, depicts a cross-sectional view of the “over-the-wire” type guide mechanism, with the

blood pump (12), cannula (14), guide mechanism (16), rotor (44), rotor shaft (46), and impeller (48). J.A. 135, 11:8–11. The impeller (48) includes a hub (56) and a plurality of blades (58) extending therefrom. *Id.* at 11:33–34.

FIG. 3



J.A. 95, Fig. 3.

At issue on appeal are two claim terms in claim 1 and one claim term in claim 24 of the '783 patent, all of which are emphasized below. Claim 1 recites in relevant part:

An intravascular blood pump system, comprising:

...

a ***guide mechanism comprising a lumen*** having a proximal end and a distal end, the guide mechanism adapted to guide a distal portion of said intravascular blood pump system to a predetermined location within a circulatory system of a patient;

wherein an axis coaxial with and extending through a portion of said guide mechanism extends through a region delimited by the outer cannula surface, and wherein ***the guide mechanism is configured to allow for a guide wire to slideably advance therealong.***

J.A. 146, 33:60–34:14 (emphases added).

Claim 24 recites in relevant part “[a]n intravascular blood pump system, comprising: . . . a cannula . . . , **wherein the guide wire does not pass through the rotor hub or the catheter.**” J.A. 148, 37:32–38:18 (emphasis added).

II

In 2017, Maquet sued appellees Abiomed, Inc., Abiomed R&D, Inc., and Abiomed Europe GmbH (collectively, “Abiomed”) for infringement of claims 1–9, 11–14, 16–20, 22, and 24–28 of U.S. Patent No. 9,789,238 (“’238 patent”). *Maquet Cardiovascular LLC v. Abiomed, Inc.*, No. 1:17-cv-12311-FDS (D. Mass.). Maquet later added allegations of infringement of claims 1, 2, 3, and 24 of the ’783 patent, a divisional of the ’238 patent.¹

In 2022, the district court issued a claim construction order, construing three claim terms at issue here. J.A. 9–39. The first claim term was the “guide mechanism comprising a lumen” in claim 1. J.A. 20. Both Maquet and Abiomed agreed that this claim term should be construed as a guide mechanism comprising a lumen that “does not extend through the free space between rotor blades.” *Id.* Abiomed, however, argued that this term should include an additional negative limitation that the “guidewire lumen is not distal to the cannula.” *Id.* Abiomed argued that Maquet acquiesced to an examiner’s revision of claims 14 and 22 of Maquet’s related ’238 patent, which resulted in a disclaimer of a lumen distal to the cannula in all related patents, including the ’783 patent. J.A. 21. Maquet argued that the limitation was not appropriate because no

¹ Dependent claims 2 and 3 of the ’783 patent rise and fall with claim 1. *See* Appellant Br. 28; Appellee Br. 23. Thus, for the remainder of this opinion, we only refer to claims 1 and 24.

disclaimer was apparent in the prosecution history of the '238 patent, nor was that history relevant to the '783 patent. *Id.*

The district court agreed with Abiomed, construing the claim term to include the limitation that the “guidewire lumen is not distal to the cannula.” J.A. 21–23. The district court noted that claims 14 and 22 of the '238 patent addressed an “entire elongate lumen” that is “distal to the intravascular blood pump.” J.A. 22 (citing J.A. 493). The district court explained that the examiner rejected those claims based on a lack of enablement under pre-AIA 35 U.S.C. § 112. *Id.* (citing J.A. 493). According to the district court, the examiner stated that the claims should be revised to describe the entire elongate lumen as distal to one or more of the “rotor, first port or rotor shroud.” *Id.* (quoting J.A. 493). The district court then noted that Maquet accepted the revision and subsequently amended the claims accordingly. *Id.* According to the district court, Maquet’s “acquiescence” to the examiner’s proposed revisions amounted to disclaimer of a broader claim. *Id.* The district court thus construed “guide mechanism comprising a lumen” in claim 1 of the '783 patent to require that the guidewire lumen “is not distal to the cannula.” J.A. 22–23.

The second and third terms at issue were addressed jointly by the district court. These terms, which the parties refer to as the “guide wire” terms, were (1) the “guide mechanism is configured to allow a guide wire to slideably advance” in claim 1 and (2) the “guide wire does not pass through the rotor hub of the catheter” in claim 24. J.A. 23. Maquet argued that the ordinary meaning should govern, with no construction necessary. *Id.* Abiomed agreed that the ordinary meaning should apply but with one exception, that the claims include the negative limitation that “the guide wire does not extend through the free space in between the rotor blades.” *Id.* Abiomed argued that based on the prosecution history of U.S. Patent No. 8,888,728 (“728 patent”), the great-great-grandparent of the '783

patent, Maquet surrendered any claim to a pump that employed a guide wire extending through the space between the rotor blades. J.A. 24, J.A. 130.

The district court once again agreed with Abiomed that these claims included the limitation that the “guide wire does not extend through the free space in between the rotor blades.” J.A. 25. The district court highlighted that in issuing a notice of allowance for certain claims in the ’728 patent, the examiner distinguished a prior art reference, “Völker.”² J.A. 24. According to the district court, the examiner noted that Völker threaded its guide wire through the rotor blades and did not have a separate guide lumen and thus did not teach or suggest the guide mechanisms disclosed in the ’728 patent. *Id.* Key here, the district court concluded that Maquet “adopted” the examiner’s position in the notice of allowance, which resulted in disclaimer. J.A. 25.

Following the district court’s claim construction of the “guide mechanism” in claim 1 of the ’783 patent and the “guide wire” terms in claims 1 and 24 of the same patent, the parties agreed that Maquet could not prove infringement of any of the asserted claims of the ’783 patent or the ’238 patent. J.A. 3–4. The parties thus stipulated to the entry of a final appealable judgment of non-infringement. J.A. 4. The joint stipulation stated that the district court construed “various claim terms,” which included the term “guide mechanism comprising a lumen,” and the “guide wire” terms. *Id.* The joint stipulation then provided that “[b]ased on the Court’s construction of these terms, Maquet cannot prove infringement of the Claims at Issue by the Accused Products.” *Id.*

The district court entered final judgment of non-infringement “in accordance with the Joint Stipulation.”

² U.S. Patent No. 6,248,091.

J.A. 1. The judgment noted that “Abiomed has not infringed any claim of U.S. Patent Nos. 9,789,238 or 10,238,783 under the constructions set out in the Court’s Memorandum and Order on Claim Construction.” *Id.* The district court stayed Abiomed’s counterclaim that both patents are unenforceable pending the disposition of any appeal by Maquet. J.A. 2.

Maquet appeals. We have jurisdiction over this appeal pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

I.

We first address three threshold matters. To start, Abiomed argues that we can affirm the judgment on non-infringement as to claim 1 without reaching the claim construction dispute. According to Abiomed, Maquet stipulated to non-infringement of claim 1 based on the district court’s construction of the “guide mechanism” of claim 1, which included two requirements, i.e., that the guide wire lumen (1) does not extend through the free space between the rotor blades and (2) is not distal to the cannula. Appellee Br. 23–24 (citing J.A. 4). Because Maquet does not challenge on appeal the first requirement of claim 1, Abiomed argues that “this Court must assume” that its accused products “do[] not meet the unchallenged requirement (1)” and therefore does not infringe claim 1 on this basis alone. Appellee Br. 25.

Abiomed, however, misreads the parties’ joint stipulation. Here, the district court premised its judgment on the parties’ joint stipulation. *See* J.A. 1. The parties first noted that the district court construed “guide mechanism” in claim 1 and the “guide wire” terms in claims 1 and 24. J.A. 4. The parties then jointly stipulated that “[b]ased on the [district] Court’s construction of these terms,” Maquet could not prove infringement. *See id.* Logically, by referring to the district court’s “construction of these terms,” the

parties were not referring to the portion of the district court's construction they both agreed was correct but rather to those portions in dispute. Both parties agreed that "guide mechanism" should be construed as prohibiting the lumen from passing through the free space between the rotor blades, i.e., requirement one of claim 1. J.A. 20. Given its acceptance of this requirement below, Maquet logically would not, and legally could not, challenge that requirement on appeal. *Id.* As such, the parties' joint stipulation of non-infringement does not implicate requirement one of claim 1.

Abiomed next argues that the judgment of non-infringement of claim 1 should be affirmed regardless of any claim construction dispute because its accused products do not infringe the "guide mechanism" limitation of claim 1. Appellee Br. 24–26. As Abiomed notes, claim 1 was construed so that the guide wire lumen cannot pass through the free space between the rotor blades. *Id.* at 23; *see also* J.A. 20. Abiomed argues that its accused products contain a guide wire lumen that extends through the free space between the rotor blades, and thus, its accused products cannot infringe the "guide mechanism" limitation of claim 1. Appellee Br. 26. Abiomed's argument is meritless. The question of infringement was not at issue below, and we decline to address it in the first instance. *See Electro Sci. Indus., Inc. v. Dynamic Details, Inc.*, 307 F.3d 1343, 1350 (Fed. Cir. 2002) (declining to address the question of infringement in the first instance given that "this appellate court possesses no tools or mandate for fact-finding").³

³ In the rare instance, this court may address infringement in the first instance where the record on appeal leaves no genuine issues of material fact and entitles the movant to judgment as a matter of law. *Electro Sci. Indus., Inc.*, 307 F.3d at 1350. This is not that case. Abiomed's

Finally, Abiomed argues that we “must” affirm the district court’s judgment of non-infringement as to the ’238 patent because “Maquet has not appealed it.” Appellee Br. 67. Maquet argues that we should not affirm the judgment but rather leave that portion of the judgment undisturbed. Reply Br. 3. Here, we see no difference between affirming the judgment and leaving it undisturbed. Both paths leave the judgment of non-infringement of the ’238 patent in place. However, since Maquet did not appeal the portion of the judgment concerning the ’238 patent or raise any argument in its opening brief on this issue, we decline to reach that portion of the judgment. *See Engel Indus., Inc. v. Lockformer Co.*, 166 F.3d 1379, 1383 (Fed. Cir. 1999) (“An issue that falls within the scope of the judgment appealed from but is not raised by the appellant in its opening brief on appeal is necessarily waived.”). We leave that portion of the judgment undisturbed. *See Advanced Cardiovascular Sys., Inc. v. Scimed Life Sys., Inc.*, 261 F.3d 1329, 1335 nn.3–4 (Fed. Cir. 2001).

II.

Turning to the claim construction disputes, Maquet argues that the district court erred in construing the “guide mechanism” term in claim 1 of the ’783 patent and the

infringement argument turns on Abiomed’s construction of a “guidewire lumen” as covering any free space through which the guide wire passes, in addition to a dedicated channel for the guide wire. *See* Appellee Br. 28. Maquet, however, disputes this construction, arguing on appeal that the claimed “guidewire lumen” refers only to a dedicated channel. Reply Br. 8. Given this dispute, and the lack of record evidence on this issue, we cannot say that Abiomed is entitled to judgment of non-infringement as a matter of law. The district court is better positioned to address any dispute concerning the scope of a “guide wire lumen” on remand.

“guide wire” terms in claim 1 and 24 of the same patent. Appellant Br. 28, 37. According to Maquet, the district court misapplied prosecution disclaimer when construing all three claim terms. Maquet thus argues that we should reject the district court’s claim constructions, vacate the judgment of non-infringement as to the ’783 patent, and remand for further proceedings.

A. Prosecution Disclaimer

Claims terms are generally given their ordinary and customary meaning. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc). But a claim term’s ordinary meaning must be considered in the context of all the intrinsic evidence, including the claims, specification, and prosecution history. *Biogen Idec, Inc. v. GlaxoSmithKline LLC*, 713 F.3d 1090, 1094–95 (Fed. Cir. 2013). “[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Phillips*, 415 F.3d at 1317.

“[W]here the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender.” *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003). This doctrine of prosecution disclaimer “precludes patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *CUPP Computing AS v. Trend Micro Inc.*, 53 F.4th 1376, 1382 (Fed. Cir. 2022).

Key here, “[w]hen the prosecution history is used solely to support a conclusion of patentee disclaimer, the standard for justifying the conclusion is a high one.” *Avid Tech., Inc. v. Harmonic, Inc.*, 812 F.3d 1040, 1045 (Fed. Cir. 2016). A patentee will only be bound to a disavowal that is both

“clear and unmistakable.” *CUPP Computing AS*, 53 F.4th at 1382 (citation omitted). Thus, where “the alleged disavowal is ambiguous, or even amenable to multiple reasonable interpretations, we have declined to find prosecution disclaimer.” *Avid Tech., Inc.*, 812 F.3d at 1045 (internal quotation marks and citation omitted).

Finally, “[w]e review the district court’s claim construction de novo because it was based entirely on an intrinsic evidence determination about the meaning of the prosecution history, and not on any evidence about extra-patent understandings of language or about other facts.” *Id.* at 1044–45.

B. “Guide Mechanism Comprising a Lumen”

Maquet argues that the district court erred in applying the doctrine of prosecution disclaimer when construing the claim term “guide mechanism comprising a lumen” in claim 1 of the ’783 patent. Appellant Br. 28. Specifically, Maquet argues that the district court erred by relying on an amendment made during the prosecution history of a different patent involving a different claim term. *Id.* at 28–29. Maquet also argues that even assuming enough similarity between the claims, it never made a clear and unmistakable claim disavowal. We agree with Maquet’s first argument, and thus, we need not reach Maquet’s second argument.

“The prosecution history of a related patent can be relevant if, for example, it addresses a limitation in common with the patent in suit.” *Advanced Cardiovascular Sys., Inc. v. Medtronic, Inc.*, 265 F.3d 1294, 1305 (Fed. Cir. 2001). However, if the limitations at issue are dissimilar, we generally cannot accept, without more support, that an applicant’s disclaimer with respect to one claim would be equally applicable to another claim. *Regents of Univ. of Minn. v. AGA Med. Corp.*, 717 F.3d 929, 944 (Fed. Cir. 2013); *Ventana Med Sys., Inc. v. Biogenex Lab’ys., Inc.*, 473 F.3d 1173, 1182 (Fed. Cir. 2006) (“[T]he doctrine of

prosecution disclaimer generally does not apply when the claim term in the descendant patent uses different language.”). This is because a patentee is free to take a different approach to claiming an invention in subsequent patents, either by adding limitations or by altering the claims’ format. *Regents*, 717 F.3d at 944–45. Thus, unless there is parity between the limitations, we cannot assume that the claims of an earlier, related patent present similar issues of validity to the later patent or that the applicant’s disclaimer with respect to an earlier, related claim would be equally applicable to the later claim. *Id.* In other words, for prosecution disclaimer to apply, the related patents must have limitations in common to support the inference that the patentee’s earlier arguments are also applicable to the claim limitations of the patent-in-suit. *Id.*

Here, the claim term at issue is “guidewire mechanism comprising a lumen” in claim 1 of the ’783 patent. The district court construed this claim term to include the negative limitation “distal to the cannula.” J.A. 22–23. In so holding, the district court determined that Maquet disclaimed scope during the prosecution of then-pending claims 14 and 22 of the ’238 patent, the parent of the ’783 patent. J.A. 22. This was legal error. Claim 1 of the ’783 patent and the earlier prosecuted claims of the ’238 patent are not sufficiently similar such that the prosecution history of the latter would be relevant when construing the former. *See Advanced Cardiovascular Sys., Inc.*, 265 F.3d at 1305–06. A review of the claims reveals important differences.

Claim 1 of the ’783 patent recites a “guide mechanism comprising a lumen.” In contrast, then-pending claims 14 and 22 of the ’238 patent did not even claim a guide mechanism but rather initially claimed an “entire elongate lumen distal to the intravascular blood pump,” and then after amendment, an entire elongate lumen “distal to the rotor.” Additionally, claim 1 of the ’783 patent does not require the claimed lumen to be in a specific position or have a specific

length. In contrast, the '238 patent claims do. They (1) define the position of the lumen to be distal to a specific component and (2) require an “entire elongate” lumen. Given these differences, the prosecution history of then-pending claims 14 and 22 of the '238 patent is not relevant when construing the “guide mechanism” limitation of claim 1 of the '783 patent.

Abiomed argues that prosecution disclaimer applies, despite differences in the claim language, when patents share “common subject matter.” Appellee Br. 48 (citing *Wang Lab's, Inc. v. Am. Online, Inc.*, 197 F.3d 1377 (Fed. Cir. 1999) and *Advanced Cardiovascular Sys., Inc. v. Medtronic Vascular, Inc.*, 182 F. App'x 994 (Fed. Cir. 2006) (non-precedential)). The law of prosecution disclaimer, however, does not extend this far, and we make no such extension today. It is well-established that a prosecution disclaimer analysis focuses on whether the patentee *made a clear and unmistakable* disavowal of claim scope. *Avid Tech., Inc.*, 812 F.3d at 1045. To that end, we must not divorce the analysis from the claim language at issue by looking more broadly to the claims' subject matter. *See Regents*, 717 F.3d at 944 (“Our requirement that the patents share ‘limitations in common’ is not a mere technicality.”). A reviewing tribunal must instead focus on the claim language, and differences in such language, when determining whether the prosecution history of an earlier, related patent is relevant for construing a later claim. *Microsoft Corp. v. Multi-Tech Sys., Inc.*, 357 F.3d 1340, 1349 (Fed. Cir. 2004); *ResQNet.com, Inc. v. Lansa, Inc.*, 346 F.3d 1374, 1383 (Fed. Cir. 2003); *Omega Eng'g, Inc.*, 334 F.3d at 1333–34; *Advanced Cardiovascular Sys., Inc.*, 265 F.3d at 1305–06; *Augustine Med., Inc. v. Gaymar Indus., Inc.*, 181 F.3d 1291, 1300 (Fed. Cir. 1999); *Laitram Corp. v. Morehouse Indus.*, 143 F.3d 1456, 1460 n.2 (Fed. Cir. 1998).

Contrary to Abiomed's position, *Wang* and *Advanced Cardiovascular* do not provide that the prosecution history of an earlier, related patent must become relevant when it

shares common subject matter with a later patent. *Advanced Cardiovascular* is non-precedential, and in any event, supports the well-established rule that prosecution disclaimer applies when there is a commonality of limitations. There, the prosecution history of an earlier, related patent was relevant to a later patent because the claim limitations were effectively the same. 182 F. App'x at 998. Specifically, we determined that the claims of the later patent “embod[ie]d the same . . . limitation as the” earlier patent. *Id.* In *Wang*, prosecution disclaimer was not even at issue. 197 F.3d at 1383–84. Rather, we agreed with the district court’s construction that the patent’s claimed “frame” was limited to character-based systems based on the patent’s specification. *Id.* at 1383. While we noted that the prosecution history of a parent patent “reinforce[d]” this conclusion, we did not determine whether the patentee made a clear and unmistakable disavowal of claim scope in prosecuting the parent patent. *Id.* at 1384. We also did not engage in any comparison between the claim language of the parent patent and child patent. *Id.* Put simply, we did not engage in a prosecution disclaimer analysis. *Id.*

In sum, the district court erred when construing “guide mechanism comprising a lumen,” by improperly importing a negative limitation from the ’238 patent’s prosecution history. We reject this construction. A “guide mechanism comprising a lumen” in claim 1 of the ’783 patent does not contain the limitation of being “not distal to the cannula.”

C. “Guide wire” Terms

i.

Maquet argues that the district court erred in applying prosecution disclaimer when it construed “guide mechanism is configured to allow for a guide wire to slideably advance therealong” in claim 1 to include the limitation that the “guide wire does not extend through the free space in between the rotor blades.” J.A. 25. Specifically, Maquet argues that the district court’s reliance on the prosecution

history for the application of claim 15 of the '728 patent, the great-great-grandparent of the '783 patent, to read in this additional limitation was erroneous for two reasons.⁴ First, according to Maquet, prosecution disclaimer was inappropriate because the district court relied on the prosecution history of a “different patent involving a *different claim term*.” Appellant Br. 43 (emphasis added). Second, Maquet argues, even if the claim terms were sufficiently similar, Maquet never made a clear and unmistakable disavowal of claim scope during the prosecution of the '728 patent. *Id.* at 43–44. For the following reasons, we disagree with Maquet as to its first argument but agree with Maquet as to the second.

First, the “guide wire” language in claim 1 of the '783 patent and the “guide wire” language in the '728 patent are sufficiently similar such that the prosecution history of the '728 patent is relevant here. Indeed, the “guide wire” limitation in these two separate claims is identical. Claim 1 of the '783 patent provides for:

a guide mechanism comprising a lumen having a proximal end and a distal end, the guide mechanism adapted to guide a distal portion of said intravascular blood pump system to a predetermined location within a circulatory system of a patient ***wherein the guide mechanism is configured to allow for a guide wire to slideably advance therealong.***

J.A. 146, 34:5–14 (emphasis added).

Claim 15 of the '728 patent provides for:

⁴ We refer to the claim numbering of the '728 patent at the time of the notice of allowance and not at the time of issuance.

a guide mechanism configured as a second lumen having a proximal end and a distal end, the guide mechanism adapted to guide a distal portion of said intravascular blood pump system to a predetermined location within the circulatory system of a patient . . . ***wherein the guide mechanism is configured to allow for a guide wire to slideably advance therealong.***

J.A. 222 (citing '728 patent, 18:43–59 (emphasis added)); J.A. 1109.

When these two claims are compared, it is evident that both claims contain the exact same guide wire limitation, and that the remainder of the claims are virtually identical except with two minor differences. First, claim 1's "comprising a lumen" is replaced with claim 15's "configured as a second lumen." Second, claim 1's "a circulatory system" is replaced with claim 15's "the circulatory system." Here, no party explicitly argues that these two differences are sufficiently dissimilar to preclude prosecution disclaimer. See Appellant Br. 43–44; Appellee Br. 65. Additionally, Maquet argued in the proceedings below during the *Markman* hearing that "hardly anything has changed" in the "guide wire" claim language in claim 1 of the '783 patent and claim 15 of the '728 patent. J.A. 971. Thus, given that guide wire language in the '783 patent and '728 patent is virtually identical, the prosecution history of claim 15 of the '728 patent is relevant when construing claim 1 of the '783 patent.

Second, despite the similarity of claim limitations, the intrinsic record shows that Maquet did not make a clear and unmistakable disavowal. To start, contrary to the district court's determination, Maquet did not make a disavowal of claim scope based on its acquiescence to statements made by the examiner in his second notice of allowance concerning claim 15 of the '728 patent. An

applicant's silence in response to an examiner's notice of allowance will generally not rise to a clear and unmistakable claim disavowal. *See Salazar v. Procter & Gamble Co.*, 414 F.3d 1342, 1345 (Fed. Cir. 2005). Here, Maquet filed a request for continued examination and submitted an information disclosure statement identifying a reference named Völker. J.A. 534–35. Völker does not disclose a lumen for the guide mechanism and instead discloses a guide wire that is threaded through the rotor blades of the pump. J.A. 536.

The examiner issued a second notice of allowance, noting that Völker lacks several features of the invention, namely the lumen, and that Völker threads the guide wire through the rotor blades, “which temporarily prevents the rotor from turning.” *Id.* Maquet never responded to the second notice of allowance and never made any affirmative statement about Völker. *See id.*; Appellant Br. 39. Thus, Maquet's silence in response to the examiner's second notice of allowance, is not, under these circumstances, a clear and unmistakable claim disavowal of a guide wire running through the rotor blades.

Abiomed argues that prosecution disclaimer is nonetheless appropriate here because Maquet later ratified and adopted the examiner's statements concerning Völker in arguing against the institution of inter partes reviews (“IPRs”) challenging the '728 patent. Appellee Br. 62. We reject this argument. Statements made by a patent owner during an IPR proceeding can be relied on to support a finding of prosecution disclaimer during claim construction. *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1360 (Fed. Cir. 2017).⁵ To invoke the doctrine of prosecution

⁵ In *Aylus*, the question presented was whether the statements made about certain patent claims during IPR proceedings could serve as support for finding prosecution

disclaimer to statements made during IPR proceedings, any such statements must be “both clear and unmistakable.” *Id.* at 1361. Here, Maquet noted in its preliminary response that the examiner had previously “found the claims patentable over . . . Voelker [sic].” J.A. 551. Maquet then argued that because Völker has “similar teachings” to a prior art reference cited to in the petition, this “alleged similarity should provide the Board with sufficient reason to deny the Petition.” *Id.* These broad and vague statements do not rise to a clear and unmistakable disclaimer that the “guide wire” of claim 15 of the ’728 patent can run through the free space of the rotor blades. These statements do not refer to any particular claim in the ’728 patent, let alone a claimed “guide wire.”

Abiomed also argues that Maquet clearly and unmistakably disavowed a guide wire running through the free space in between the rotor blades before the events concerning Völker even arose. Appellee Br. 58–60. We disagree with Abiomed. During prosecution, the examiner first rejected claim 15 as obvious over the combination of prior art references Bedingham, Gordon, and Nix. J.A. 1068, J.A. 1071. The examiner noted that Bedingham teaches claim 15 except for a tapered rotor hub and a guide mechanism configured as a second lumen. J.A. 1073–74. The

disclaimer during claim construction of the same terms in district court litigation. *See* 856 F.3d at 1358. Here, the question presented is slightly different: whether statements made about an earlier, related patent during IPR proceedings could serve as support for a finding of prosecution disclaimer during claim construction of a later patent in district court litigation. We need not answer this question given that Maquet made no clear and unmistakable claim disavowal concerning the guide wires of claim 15 of the ’728 patent during the IPR proceedings.

examiner looked to Nix for the tapered rotor hub and to Gordon for a lumen. *Id.*

Maquet responded that Bedingham, which does not disclose a lumen, teaches away from Gordon's lumen. J.A. 1110. According to Maquet, Bedingham disclosed positioning the blood pump by threading a guide wire through the existing pump in the free space between the rotor blades. J.A. 1109. Maquet argued that the threading of a guide wire through the free space of the rotor blades was a "solution" for positioning the blood pump and, thus, a skilled artisan would not look to Gordon's lumen as a solution for guiding a blood pump when Bedingham's guide wire already solved this problem. J.A. 1110. Maquet also argued that the Bedingham, Nix, and Gordon combination would result in an "inoperable" device because Gordon's lumen would run through the free space between Bedingham's rotor blades and prevent the blades from turning. J.A. 1111. The examiner accepted Maquet's arguments and issued a first notice of allowance. J.A. 174.

Maquet's response to the examiner concerning Bedingham, Nix, and Gordon at no point clearly and unmistakably disavowed the guide wire in claim 15 running through the free space between the rotor blades. At most, Maquet's response related to the parties' agreed construction that the lumen does not extend through the free space between the rotor blades since doing so would render the device inoperable. Additionally, Maquet's argument that a skilled artisan would not be motivated to combine the prior art references does not speak to the scope of claim 15.

Turning away from the prosecution history, Abiomed argues that we should affirm the district court's construction based on other aspects of the intrinsic record. First, Abiomed argues that the "guide wire" cannot pass through the free space between the rotor blades based on the parties' agreement that the guide wire lumen cannot pass through the rotor blades. Appellee Br. 53. According to

Abiomed, the specification of the '783 patent teaches that the lumen of the guide mechanism is the path the guide wire takes through the blood pump system. *Id.* at 54. Abiomed argues that if the guide wire lumen of claim 1 cannot pass through the free space between the rotor blades, then by logical extension neither can the guide wire. *Id.* Abiomed's position, however, falls apart when considering the specification. Here, no party disputes that the specification allows for a removable guide wire. *See* J.A. 136, 14:44–49; *see also* Appellee Br. 56; Reply Br. 30. It is logical for the guide wire to pass through the free space between the rotor blades, even though the lumen cannot, because the guide wire can be removed before operation of the pump. Thus, the parties' agreement concerning the guide wire lumen does not require us to also determine that the guide wire itself cannot pass through the free space between the rotor blades.

Second, Abiomed argues that the “guide wire” cannot pass through the free space between the rotor blades because the specification of the '783 patent does not disclose or support claims to a guide wire passing through the rotor blades. Appellee Br. 55. Abiomed's argument once again fails. A patent specification will narrow claim scope when a patentee (1) acts as his own lexicographer, or (2) disavows scope in the specification or during prosecution. *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014).⁶ As to disavowals made in the specification, the patentee must limit the claim scope using “words or expressions of manifest exclusion or restriction.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004) (citation omitted). Here, Abiomed does not point us to any disclosure in the '783 patent, nor do we see any, that manifestly excludes a guide wire passing through the free

⁶ Abiomed makes no argument that Maquet acted as its own lexicographer, so we do not reach this issue.

space of the rotor blades. Indeed, as previously noted, the specification allows for the guide wire to pass through the free space between the rotor blades. *See* J.A. 136, 14:44–49.

In sum, we reject the district court’s erroneous construction of the guide wire limitation in claim 1. Maquet made no clear and unmistakable claim disavowal of a guide wire running through the free space between the rotor blades during the prosecution of claim 15 of the ’728 patent. Additionally, the ’783 patent does not support a limitation which precludes the guide wire running through such free space. Finally, the parties’ agreement that the guide wire lumen cannot pass through the free space of the rotor blades does not necessarily mean that a guide wire could not pass through such free space.

ii.

Maquet argues that the district court erred in construing the term “the guide wire does not pass through the rotor hub or the catheter” of claim 24 of the ’783 patent for the same two reasons it did when construing the guide wire limitation of claim 1, i.e., (1) there is no identity in the claim limitations at issue, and (2) Maquet never made a clear and unmistakable claim disavowal of a guide wire running through the free space of the rotor blades during the prosecution of the ’728 patent. Appellant Br. 44. We agree with Maquet as to its first argument. And in any event, as we previously concluded, Maquet made no clear claim disavowal during the prosecution of the ’728 patent of a guide wire running through the free space of the rotor blades.

Here, the claim limitations at issue are sufficiently different such that the prosecution history of the ’728 patent is not relevant. First, as previously noted, the relevant claim of the ’728 patent discloses a “guide mechanism” that contains a lumen and a guide wire. *See* J.A. 222 (citing ’728 patent, 18:43–59). In contrast, claim 24 of the

'783 patent recites no guide mechanism but rather just the guide wire. J.A. 148, 37:32–38:18. Furthermore, claim 24 requires that the guide wire not pass through the rotor hub. *Id.* at 38:9–10. This limitation was not part of any claim at issue in the prosecution of the '728 patent. Thus, the prosecution history of the '728 patent is not relevant, as it does not “address[] a limitation in common with the patent in suit.” *Advanced Cardiovascular Sys.*, 265 F.3d at 1305. We reject the district court’s construction of the “guide wire” term in claim 24. This claim does not include the limitation that the guide wire may not pass through the free space of the rotor blades.

CONCLUSION

We have considered the parties’ remaining arguments and find them unpersuasive. For the reasons above, we hold that the district court erred in construing the “guide mechanism” term in claim 1 of the '783 patent and the “guide wire” terms in claims 1 and 24 of the same patent. We reject the district court’s claim constructions, vacate the district court’s final judgment of non-infringement as to the '783 patent, and remand for proceedings consistent with this opinion. We leave the judgment of non-infringement as to the '238 patent undisturbed.

VACATED AND REMANDED

COSTS

Costs for Maquet.