

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MEDTRONIC VASCULAR, INC., MEDTRONIC VASCULAR GALWAY
UNLIMITED COMPANY, MEDTRONIC LOGISTICS LLC,
MEDTRONIC, INC., and MEDTRONIC USA, INC.,
Petitioner,

v.

TMT SYSTEMS, INC.,
Patent Owner.

IPR2021-01532
Patent 7,101,393 B2

Before ERICA A. FRANKLIN, JAMES A. TARTAL, and
CYNTHIA M. HARDMAN, *Administrative Patent Judges*.

FRANKLIN, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

Medtronic Vascular, Inc., Medtronic Vascular Galway Unlimited Company, Medtronic Logistics LLC, Medtronic, Inc., and Medtronic USA, Inc. (collectively, “Petitioner”) filed a Petition requesting an *inter partes* review of claims 1, 2, 4, 10, 11, and 26 of U.S. Patent No. 7,101,393 B2 (Ex. 1001, “the ’393 patent”). Paper 4 (“Petition” or “Pet.”). TMT Systems, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition. Paper 12 (“Prelim. Resp.”). Pursuant to our authorization, Petitioner filed a Reply (Paper 13, “Reply”), and Patent Owner filed a Sur-reply (Paper 16, “Sur-reply”).

We have authority to determine whether to institute an *inter partes* review. *See* 35 U.S.C. § 314 (2018); 37 C.F.R. § 42.4(a) (2020). The standard for instituting an *inter partes* review is set forth in 35 U.S.C. § 314(a), which provides that an *inter partes* review may not be instituted unless “there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” Upon considering the arguments and evidence in the record, we determine that Petitioner has established a reasonable likelihood that it would prevail in showing the unpatentability of at least one claim challenged in the Petition. Accordingly, we institute an *inter partes* review of claims 1, 2, 4, 10, 11, and 26 of the ’393 patent.

A. *Real Parties-in-Interest*

Petitioner identifies Medtronic Vascular, Inc., Medtronic Vascular Galway Unlimited Company, Medtronic Logistics LLC, Medtronic, Inc., and Medtronic USA, Inc. as real parties-in-interest. Pet. 4. Patent Owner identifies TMT Systems, Inc. as the real party-in-interest. Paper 7, 1.

B. Related Proceedings

Petitioner and Patent Owner provide notice of a district court litigation involving the '393 patent: *TMT Sys., Inc. v. Medtronic, Inc. and Medtronic USA, Inc.*, No. 6:20-cv-00973-ADA (W.D. Tex.) (the "District Court case"). Pet. 3; Paper 7, 1. The parties further identify IPR2021-01533 as a proceeding in which claims 1, 2, 4, 10, 11, and 26 of the '393 patent are also challenged under a different claim construction. Pet. 1, 3; Paper 3 ("Petition Ranking"), 1; Paper 7, 1.

C. The '393 patent

The '393 patent is directed to "an endovascular apparatus having an expandable attachment device for securing the endovascular apparatus to an interior wall of a lumen." Ex. 1001, 1:7–11. The Specification explains that the device is useful for treating aneurysms or arterial blockages, wherein the expandable attachment device is attached to an endovascular apparatus, such as a prosthetic graft, stent, or tubular sleeve. *See id.* at 1:7–2:67. The Specification explains that "[i]n the past aortic aneurysms were treated almost exclusively by surgical repair" in which "the aneurysm would be resected and replaced by an artificial artery known as a prosthetic graft." *Id.* at 1:25–28. "Because of the substantial risks associated with such an invasive surgery, however, other treatments for aortic aneurysms have been proposed including endovascular grafting." *Id.* at 1:28–31. The Specification describes that for prior endovascular grafts that are introduced into the patient percutaneously, "the graft must be collapsible into a small profile for negotiating the vascular system" and "[u]pon reaching the site of the aneurysm the graft and its attachment devices can be expanded into a desired shape." *Id.* at 1:43–47. According to the Specification, "[a] variety of expandable attachment devices have been proposed for securing an

endovascular graft to an interior wall of a vessel most of which use stents with hooks or barbs to penetrate the intima of the vessel.” *Id.* at 1:48–51.

With regard to the invention, the Specification explains that “an endovascular apparatus having a new expandable attachment device is desired” and that it “should be small with a low profile and should expand to many times its initial diameter.” *Id.* at 1:54–57. The Specification further explains that the expandable attachment device “should exert enough radial force when expanded to fix into the aorta and thereby reduce blood leaks around the apparatus.” *Id.* at 1:57–60.

The ’393 patent describes such an expandable attachment device that “includ[es] a plurality of telescoping arms that are joined together to form an expandable ring” such that the “ring may function similarly to stents.” *Id.* at 1:66–2:2. According to the Specification,

The expandable attachment device comprises a plurality of telescoping arms that are attached to form an expandable ring. ***Each telescoping arm is similar to an expandable presentation pointer.*** Alternatively, each telescoping arm ***may function*** like an accordion.

Id. at 2:36–40 (emphasis added).

Figure 4C of the ’393 patent is reproduced below.

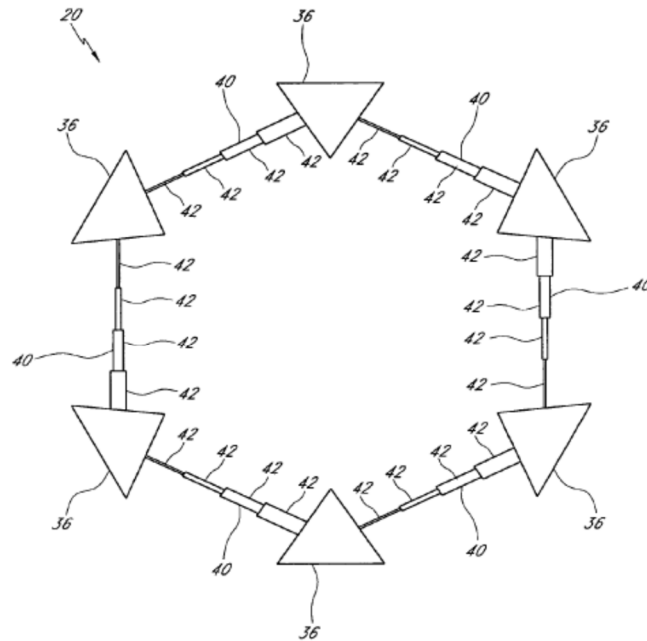


FIG. 4C

Figure 4C is a top view of an expandable attachment device that is in a fully expanded state. *Id.* at 3:13–14. As shown in Figure 4C, expandable attachment device 20 includes a plurality of fixation components 36 positioned about its perimeter and “telescopic arm 40 is used to attach each fixation component 36 to an adjacent fixation component 36.” *Id.* at 5:1–5, 12–14. The Specification explains that

[t]he telescoping arm 40 may be pivotably attached to a fixation component 36 at one or both ends of the arm 40. A telescoping arm 40 is made up of a plurality of segments 42. The segments 42 may be in slideable contact with one another and may be incrementally sized so as to fit within one another. For example, each telescoping arm 40 may be constructed from what is referred to generally as “nested tubes.”

...

[T]he attachment device may take variety of shapes depending upon the configuration of the telescoping arms 40 and the fixation components 36. For example, referring to FIGS. 12A–D, the telescoping arms 40 may be positioned in a single plane. Alternatively, referring to FIGS. 13A–U, the telescoping arms 40

may be positioned in multiple planes in, for example, what is referred to herein as an “M configuration.” One possible advantage of the M configuration is that it may produce superior radial force for holding the attachment device in position. In addition, the M configuration may produce the same ratio of expansion (i.e., the ratio of the final outer diameter of the attachment device in its expanded state to the initial outer diameter of the attachment device in its collapsed state) as the “single plane configuration” using fewer parts.

Id. at 5:14–21, 31–46.

Figure 12A of the '393 patent is reproduced below.

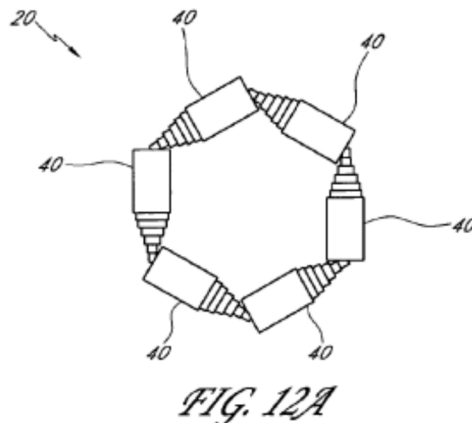
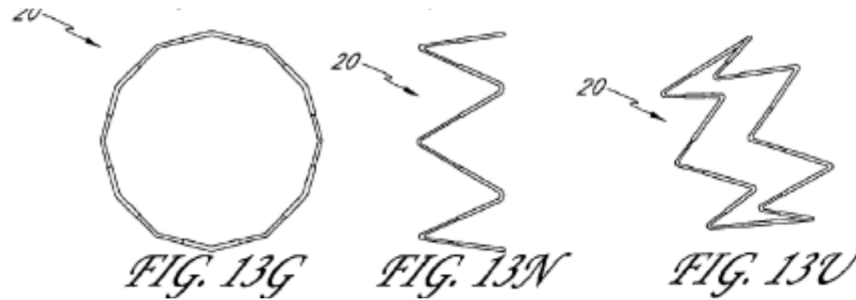


Figure 12A “is a schematic top view of an expandable attachment device according to a second aspect in a partially expanded state.” *Id.* at 3:29–31. Figure 12A shows that “telescoping arms 40 may be positioned in a single plane.” *Id.* at 5:34–35.

Figures 13A, 13G, 13H, 13N, 13O, and 13U of the '393 patent are reproduced below.





Figures 13A and 13G “are schematic top views of an expandable attachment device according to a third aspect in various states of expansion.” *Id.* at 3:38–40. Figures 13H and 13N “are schematic side views of the expandable attachment device” of Figures 13A and 13G, respectively. *Id.* at 3:41–42. Figures 13O and 13U “are schematic isometric views of the expandable attachment device” of Figures 13A and 13 G, respectively. *Id.* at 3:43–44. Figures 13A, 13G, 13H, 13N, 13O, and 13U show that “telescoping arms 40 may be positioned in multiple planes” in what is referred to as an “M configuration.” *Id.* at 5:36–38.

Figure 9 of the '393 patent is reproduced below.

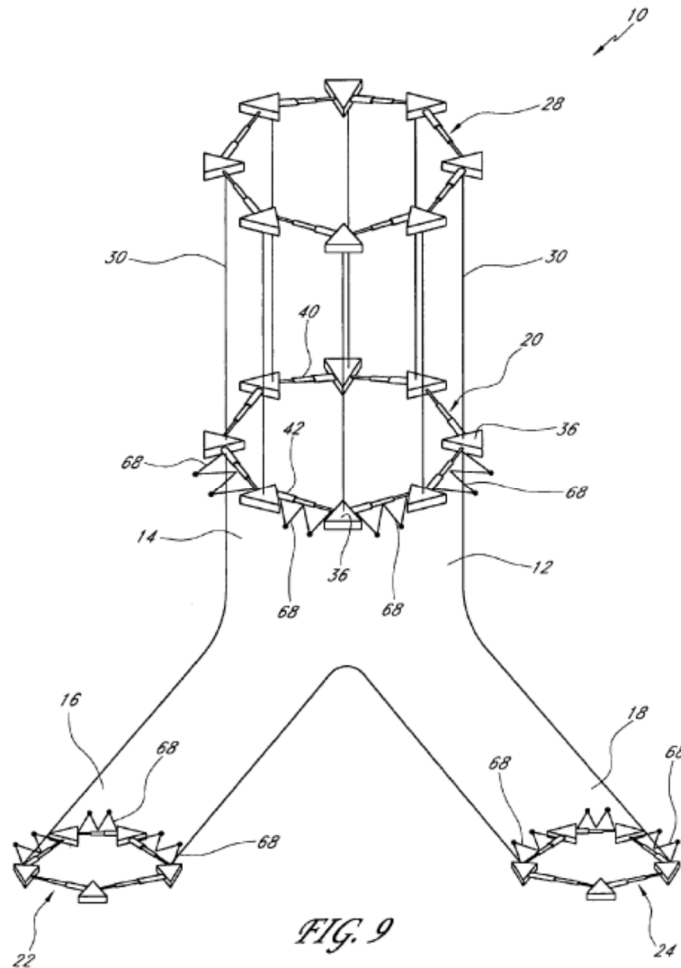


Figure 9 “is an endovascular apparatus according to a fourth aspect.” *Id.* at 3:23–24. Figure 9 shows a plurality of “M springs 68” that are used “as graft expanders” to “reduce leakage around the perimeter of the tubular sleeve 12.” *Id.* at 6:22–28. “In the embodiment shown in FIG. 9, the M springs 68 are not attached to the segments” of telescoping arms 40 and “are located on the exterior” of tubular sleeve 12. *Id.* at 6:30–33. The Specification further discloses that

[i]n another embodiment, the M springs 68 may be . . . attached to the fixation components 36. Of course, in place of the “M springs” 68, springs in the shape of a “V” may be used. Alternatively, in another embodiment . . . , the M springs 68 may be replaced by telescoping arms 40 in an “M configuration.”

Id. at 6:33–40.

D. Illustrative Claim

Petitioner challenges independent claims 1 and 26, along with dependent claims 2, 4, 10, and 11 of the '393 patent. Independent claim 1, set forth below, is illustrative.

1. An attachment device that is expandable from a first state to a second state for securing an endovascular apparatus to an interior wall of a lumen, the device comprising:

a plurality of telescoping arms, the arms being operatively connected to one another so as to form a perimeter of variable length, wherein the telescoping arms are operatively coupled to one another at an angle so that multiple telescoping arms form the shape of a M.

Ex. 1001, 7:16–23.

E. Asserted Grounds of Unpatentability

Petitioner asserts that claims 1, 2, 4, 10, 11, and 26 are unpatentable on the following grounds.

Claims Challenged	35 U.S.C. §	References
1, 2, 4, 11, 26	103(a) ¹	Quiachon ² , Lazarus ³
10	103(a)	Quiachon, Lazarus, Lau ⁴
1, 2, 4, 10, 11, 26	103(a)	Hartley ⁵ , Lazarus

¹ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), amended 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the '393 patent issued has an effective filing date prior to March 16, 2013, the pre-AIA version of § 103 applies.

² Quiachon et al., US 5,824,044, issued Oct. 20, 1998 (Ex. 1004, “Quiachon”).

³ Lazarus, US 6,165,214, issued Dec. 26, 2000 (Ex. 1006, “Lazarus”).

⁴ Lau et al., US 5,919,225, issued July 6, 1999 (Ex. 1007, “Lau”).

⁵ Hartley et al., WO 99/29262 A1, published June 17, 1999 (Ex. 1005, “Hartley”).

Petitioner also relies on the Declaration of Elliot L. Chaikof, M.D., Ph.D. (Ex. 1003).

II. ANALYSIS

A. *Discretion to Institute under 35 U.S.C. § 314(a)*

Institution of *inter partes* review is discretionary:

The Director may not authorize an inter partes review to be instituted unless the Director determines that the information presented in the petition filed under section 311 and any response filed under section 313 shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.

35 U.S.C. § 314(a). This language provides the Director with discretion to deny institution of a petition. *See Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016) (“[T]he agency’s decision to deny a petition is a matter committed to the Patent Office’s discretion.”); Patent Trial and Appeal Board Consolidated Trial Practice Guide (“CTPG”) at 55 (November 2019), *available at* <https://www.uspto.gov/TrialPracticeGuideConsolidated>. The Director has delegated authority under § 314(a) to the Board. 37 C.F.R. § 42.4(a) (“The Board institutes the trial on behalf of the Director.”).

The Leahy-Smith America Invents Act was “designed to establish a more efficient and streamlined patent system that will improve patent quality and limit unnecessary and counterproductive litigation costs.” H.R. Rep. No. 112–98, pt. 1, at 40 (2011), 2011 U.S.C.C.A.N. 67, 69 (reviews were meant to be “quick and cost effective alternatives to litigation”); *see also* S. Rep. No. 110–259, at 20 (2008); CTPG 56. The Board recognized these goals, but also “recognize[d] the potential for abuse of the review process by repeated attacks on patents.” *General Plastic Co. v. Canon Kabushiki*

Kaisha, IPR2016-01357, Paper 19, 16–17 (PTAB Sept. 6, 2017) (precedential).

In *NHK Spring Co. v. Intri-Plex Technologies, Inc.*, IPR2018-00752, Paper 8 (PTAB Sept. 12, 2018) (precedential), the Board determined that the advanced state of a parallel proceeding is an additional factor weighing in favor of denying institution under 35 U.S.C. § 314(a). *Id.* at 19–20. In *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019 (“*Fintiv*”), Paper 11 (PTAB Mar. 20, 2020) (precedential), the Board articulated a list of factors that we consider in determining whether to exercise discretion to deny institution based on an advanced stage of a parallel proceeding:

1. whether the court granted a stay or evidence exists that one may be granted if a proceeding is instituted;
2. proximity of the court’s trial date to the Board’s projected statutory deadline for a final written decision;
3. investment in the parallel proceeding by the court and the parties;
4. overlap between issues raised in the petition and in the parallel proceeding;
5. whether the petitioner and the defendant in the parallel proceeding are the same party; and
6. other circumstances that impact the Board’s exercise of discretion, including the merits.

Fintiv, Paper 11, 5–6. “These factors relate to whether efficiency, fairness, and the merits support the exercise of authority to deny institution in view of an earlier trial date in the parallel proceeding.” *Id.* In evaluating these factors, we take “a holistic view of whether efficiency and integrity of the system are best served by denying or instituting review.” *Id.* (citing CTPG 58).

Patent Owner has asserted the '393 patent against Petitioner Medtronic, Inc. in the District Court case.⁶ Pet. 3; Paper 7, 1; Prelim. Resp. 36. Petitioner contends that because *Fintiv* factors 2–6 weigh against discretionary denial under § 314(a) and because *Fintiv* factor 1 is neutral, the *Fintiv* factors weigh against discretionary denial. Pet. 86–88; Reply 6–10. Patent Owner contends that all of the factors considered under *Fintiv* support exercising discretion to deny institution of *inter partes* review under 35 U.S.C. § 314(a). Prelim. Resp. 33–42; Sur-reply 4–10. In our analysis below, we address each of the *Fintiv* factors in turn.

1. First Fintiv Factor: Existence or Likelihood of Stay

Although the District Court case is not currently stayed, Petitioner asserts that it will seek a stay in District Court pending institution of *inter partes* review. Reply 4. According to Petitioner, this factor is neutral because “[i]t would be improper to speculate, at this stage, what the [] court might do regarding a motion to stay.” *Id.* at 5 (quoting *Dish Network L.L.C. v. Broadband iTV, Inc.*, IPR2020-01359, Paper 15, 11 (PTAB Feb. 12, 2021)).

Patent Owner asserts that even if Petitioner seeks a stay, it is highly unlikely that it will be granted because the District Court judge “has publicly stated that he will almost never stay cases with a co-pending IPR and aims to get to trial as ‘quickly’ as reasonable,” and this case has already been pending for more than a year. Prelim. Resp. 35. Further, Patent Owner

⁶ As noted below with respect to factor 5, Petitioners Medtronic Vascular, Inc., Medtronic Vascular Galway Unlimited Company, and Medtronic Logistics LLC were not named as parties in the District Court case, and Medtronic USA, Inc., was dismissed from this case for lack of venue. Reply 8 (citing Ex. 1055).

asserts that the judge “has almost universally denied motions to stay pending IPR [*inter partes* review] and has emphasized his unwillingness to stay cases at advanced stages.” Sur-reply 4 (citing Ex. 2062; Ex. 2077). Thus, Patent Owner contends that this factor weighs in favor of discretionary denial. *Id.*

As recognized by the parties, the District Court case has not been stayed. Quantifying that possibility is difficult. Because this case was previously stayed pending resolution of a request for writ of mandamus from the Federal Circuit, and has been pending for more than a year, it may be unlikely that an additional stay will be granted. However, even in view of the public comments by the District Court judge regarding his opinions on stays, we decline to speculate how the judge would rule on a motion to stay in the specific parallel case at issue here.

Accordingly, we conclude that the first *Fintiv* factor is neutral with respect to exercising our discretion to deny institution under § 314(a).

2. *Second Fintiv Factor: Proximity of Anticipated Trial Date and Statutory Deadline for Final Written Decision*

Petitioner asserts that the District Court has indicated that trial will be set for on or about January 16, 2023, approximately two months before the statutory due date for the Board’s Final Written Decision. Reply 5.

According to Petitioner, we should not rely on that trial date as a basis to deny institution because: (a) trials are frequently delayed; (b) the District Court judge assigned to the case “already has nine other patent infringement trials scheduled to start between January 11, 2023 and January 19, 2023” (Ex. 1061); and (c) “the parallel [court] case has already been delayed several times, primarily based on Patent Owner’s own actions.” *Id.*

Petitioner contends that significant weight should not be given to a trial date that is still many months away because “much can change during this time.”

Id. at 7 (quoting *Dish Network*, Paper 15, 15) (citing *Sand Revolution II, LLC v. Continental Intermodal Group – Trucking LLC*, IPR2019-01393, Paper 24, 8–9 (PTAB June 16, 2020) (informative)).

At the time that Patent Owner filed its Preliminary Response, the District Court had not yet set a trial date. Prelim. Resp. 36. In the Sur-reply, Patent Owner asserts that the District Court recently issued a scheduling order with a trial date of January 17, 2023, which is two months before the statutory due date for the Board’s Final Written Decision. Sur-reply 4 (citing Ex. 2081). Patent Owner asserts that, based on the District Court judge’s practice of not moving trial dates “except in extreme situations,” there is no reason to presume such a delay will occur. *Id.* at 4–5 (quoting Ex. 2059; citing *Google v. Ikorongo Tech. LLC*, IPR2021-00204, Paper 13, 8 (PTAB June 27, 2021)). Thus, Patent Owner asserts that this factor favors discretionary denial.

Even though the proximity of the scheduled trial date and the statutory due date for a Final Written Decision here are very close, as Patent Owner has correctly noted, Prelim. Resp. 35, the Board has explained that “[i]f the court’s trial date is earlier than the projected statutory deadline, the Board generally has weighed this fact in favor of exercising authority to deny institution.” *Fintiv*, 9.

Thus, we determine that the second *Fintiv* factor weighs only slightly in favor of exercising our discretion to deny institution under § 314(a).

3. *Third Fintiv Factor: Investment in Parallel Proceeding*

Under this factor, we first consider Petitioner’s timing in filing the Petition. If a petitioner, “faced with the prospect of a looming trial date, waits until the District Court trial has progressed significantly before filing a petition,” that decision “may impose unfair costs to a patent owner.”

Fintiv, 11. On the other hand, “[i]f the evidence shows that the petitioner filed the petition expeditiously, such as promptly after becoming aware of the claims being asserted, this fact has weighed against exercising the authority to deny institution.” *Id.*

Patent Owner asserts that this factor favors denial because “Petitioner waited over 11 months (until the brink of the statutory deadline) after service of the complaint before filing the Petition.” Prelim. Resp. 37; Reply 6.

In its Reply, Petitioner asserts that it had intended to wait on the District Court’s claim construction ruling to avoid filing two petitions that addressed competing claim constructions. Reply 10. According to Petitioner, however, the *Markman* proceedings in the District Court were delayed, “due largely to Patent Owner’s late, improper, and ultimately unsuccessful attempt to add Medtronic USA, Inc. as a defendant in the parallel case.” *Id.* (citing Ex. 1062). Petitioner explains that it “filed the Petitions just weeks after the court’s motion hearing on August 5, 2021, where it was announced that a claim construction hearing would not be scheduled until the pending venue motions were resolved.” *Id.* (citing Ex. 1050, 1).⁷

Patent Owner responds that the *Markman* hearing was delayed four times due to Petitioner’s “meritless stalling in connection with a venue dispute.” Sur-reply 10. According to Patent Owner, Petitioner waiting eleven months before filing the Petition was “at its own peril.” *Id.*

Based on the procedural posture of the District Court case during many of the months following the filing of the Complaint, including the

⁷ We note that Petitioner provided this explanation in its discussion of factor 6, however, we consider it here as we find it directly relevant to factor 3.

asserted venue disputes, we find no unreasonable delay in Petitioner's filing of the Petition.

Second, we consider "the amount and type of work already completed in the parallel litigation by the court and the parties at the time of the institution decision." *Fintiv*, 9. "Specifically, if, at the time of the institution decision, the District Court has issued substantive orders related to the patent at issue in the petition, this fact favors denial." *Id.* at 9–10.

Patent Owner asserts that the parties have invested substantial resources toward trying the parallel litigation. Prelim. Resp. 37. Specifically, Patent Owner asserts that infringement contentions and invalidity contentions were served several months ago, claim construction briefing was completed more than six months ago, and the parties have engaged in fact discovery for four months. *Id.*

Petitioner asserts that, "[t]o date, the parallel case has largely focused on venue disputes. Only one deposition on non-venue issues has occurred." Reply 6. Petitioner asserts also that the District Court has issued preliminary claim constructions, but not final claim constructions. *Id.*; *see also id.* n.4 (citing Ex. 1059). Petitioner notes that its motion for judgment on the pleadings remains pending. *Id.* (citing Ex. 1062). Petitioner emphasizes that "[b]efore the statutory deadline for institution, the parties will not have completed fact discovery, started expert discovery, briefed any summary judgment or Daubert motions, or begun pre-trial preparation." *Id.* at 6–7 (citing Ex. 2059). Accordingly, Petitioner contends that this factor weighs against denying institution.

In the Sur-reply, Patent Owner explains that the parties and the District Court have made further investments in the parallel litigation since the filing of its Preliminary Response. Sur-reply 7. In particular, Patent

Owner notes that the District Court recently issued preliminary claim constructions and deemed the claim construction hearing to have occurred. *Id.* (Ex. 1059). Patent Owner asserts that, before the statutory deadline for the institution decision, the parties will have served their final invalidity and infringement contentions. *Id.* (citing Ex. 2081).

Based on the foregoing it appears that significant work has been done in the District Court case. On the other hand, as Petitioner asserts, Pet. 87, much more work remains, including ongoing fact discovery, expert reports, expert discovery, dispositive motions, and pretrial motions and disclosures, *see* Ex. 2081 (Scheduling Order, dated Jan. 20, 2022).

Upon consideration of the foregoing, we determine that the third *Fintiv* factor is neutral with respect to exercising our discretion to deny institution under § 314(a).

4. *Fourth Fintiv Factor: Overlap Between Issues Raised in Petition and in Parallel Proceeding*

Petitioner asserts that it has “raised invalidity defenses in the co-pending proceeding that could not be raised before the Board.” Pet. 88. Notably, “Petitioner stipulates that, if this IPR is instituted, Defendants will not advance the grounds that are raised or reasonably could have been raised in this IPR in the co-pending district court proceeding, eliminating any overlap between the IPR and the co-pending district court proceeding.” *Id.* (citing *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 (PTAB Dec. 1, 2020) (precedential)).

Patent Owner asserts that Petitioner’s stipulation is defective because Petitioner in this proceeding “has no authority to stipulate on behalf of and bind its parent Medtronic, Inc., the defendant in the district court litigation.”

Prelim. Resp. 38.⁸ Additionally, Patent Owner asserts that, unlike in *Sotera*, Petitioner has not filed its stipulation at the District Court. *Id.* at 39.

Petitioner asserts that its *Sotera*-like stipulation is not defective, noting that it has previously requested the Board to update the caption for the proceeding to include the other entities identified as real parties-in-interest in the Petition, including Medtronic, Inc., as Petitioners. Reply 7 (citing Ex. 1056). Petitioner also confirms that “Medtronic, Inc. agrees that it is bound by the stipulation in the Petition.” *Id.* Thus, Petitioner contends that “because ‘there is little risk of duplication of effort or conflicting decisions,’ this factor weighs against denying institution.” *Id.* at 7–8 (citing *Facebook, Inc. v. USC IP P’ship, L.P.*, IPR2021-00033, Paper 13, 14 (PTAB Apr. 30, 2021)).

Patent Owner responds that Petitioner’s stipulation remains defective because “Medtronic, Inc. has not filed any power of attorney or other documents making it a petitioner in this proceeding.” Sur-reply 8–9. Patent Owner additionally repeats its contention that the stipulation is also defective because Medtronic, Inc. has not filed the stipulation at the District Court “agreeing to be bound to the same.” *Id.* at 9.

Concerns about the degree of overlap may be mitigated where a petitioner agrees not to pursue in the parallel District Court litigation the grounds advanced in the petition. *Sand Revolution II*, Paper 24, 11. A petitioner stipulating not to pursue “any ground raised or that could have

⁸ Initially, the Petitioner in this proceeding was only Medtronic Vascular, a subsidiary of Medtronic, Inc. Patent Owner acknowledges that Petitioner’s counsel has requested that the Board include additional parties, including Medtronic, Inc., as a petitioner. *See* Prelim. Resp. 38 n.15 (citing Ex. 1056). We subsequently granted Petitioner’s unopposed request and added the additional parties as petitioners in this proceeding. *See* Paper 18.

been raised” weighs strongly in favor of not exercising discretionary denial. *Sotera*, Paper 12, 18–19. Petitioner unequivocally stipulates that, if the Board here institutes an *inter partes* review, Medtronic, Inc. will not advance the grounds that are raised or reasonably could have been raised in the *inter partes* review in the co-pending District Court proceeding, thus eliminating any overlap between the *inter partes* review and the co-pending District Court proceeding. Pet. 88. Moreover, we have granted Petitioner’s unopposed request to include the real parties-in-interest as named petitioners in this proceeding, and that Order instructs Petitioner to file a power of attorney for the added parties. *See* Paper 18, 2.

Although Petitioner has not yet filed its stipulation at the District Court, we consider Petitioner to be bound by any stipulation that it asserts to the Board in the proceeding for purposes of our *Fintiv* analysis.

Considering that Petitioner has agreed to be bound by a stipulation that is substantively the same as the stipulation addressed in *Sotera*, we follow the *Sotera* precedent in finding that this factor weighs strongly against exercising discretion to deny institution under § 314(a). *Sotera*, Ex. 1038, 7–8.

5. *Fifth Fintiv Factor: Whether Petitioner and Parallel Proceeding Defendant Are Same*

Patent Owner asserts that “[g]iven that the real party in interest in this proceeding is a party in the parallel litigation, ‘this factor on balance weighs in favor of discretionary denial.’” Prelim. Resp. 39 (quoting *Daiichi Sankyo, Inc. v. Seagen Inc.*, PGR2021-00030, Paper 11 (PTAB June 24, 2021) (citing *Fintiv*, 13–14)).

Petitioner asserts that Medtronic, Inc. is the sole remaining defendant in the District Court case. Reply 8–9. Petitioners Medtronic Vascular, Inc.,

Medtronic Vascular Galway Unlimited Company, and Medtronic Logistics LLC have never been named as parties in the District Court case and Medtronic USA, Inc., was dismissed from the District Court case for lack of venue. *Id.* at 8 (citing Ex. 1055). Accordingly, Petitioner asserts that this factor weighs against denying institution. *Id.* at 9.

Petitioner's argument is not well-taken. Medtronic, Inc., is one of the Petitioners in this proceeding and the Defendant in the District Court proceeding. All Petitioners and real parties-in-interest here are Medtronic entities. *See* Pet. 3. Thus, given the identity of the Petitioners and real parties-in-interest in this proceeding and in the District Court case, we determine that this factor weighs in favor of exercising our discretion to deny institution under § 314(a).

6. *Sixth Fintiv Factor: Other Circumstances (Including Merits)*

Patent Owner asserts that other circumstances that favor exercising discretionary denial include: (a) Petitioner's filing multiple petitions to challenge the same claims based on different claim constructions; (b) Petitioner's delay before filing the Petition; and (c) the lack of arguments of substance on the merits in the Petition. Prelim. Resp. 40–41.

Petitioner asserts that this factor weighs in favor of institution because the merits of the Petitioner are strong. Reply 9. Petitioner disagrees with Patent Owner that filing two petitions to address genuine disputes regarding the proper interpretation of claims supports discretionary denial. *Id.* at 9 (citing *3Shape A/S v. Align Tech., Inc.*, IPR2020-00222, Paper 12, 19 (PTAB May 26, 2020)). Additionally, Petitioner explains that it “sought to avoid filing two Petitions by awaiting a claim construction ruling from the district court,” but ultimately filed the petitions just two weeks after the District Court announced that it would not hold a claim construction hearing until

Patent Owner's pending venue motions were resolved. *Id.* (citing Ex. 1050, 1).

As discussed above, we have not found that Petitioner's delay in filing the Petition was unreasonable. Additionally, we do not find that Patent Owner has shown how Petitioner's filing of multiple petitions favors denial of institution based upon the existence of a parallel case in the District Court. Further, as described in more detail below, we find the evidence and arguments presented by Petitioner in the instant Petition are sufficient, on the current record, to meet our standard for instituting an *inter partes* review. The question of whether the challenged claims are unpatentable remains open for determination at trial. On balance, we determine that the sixth factor is neutral with respect to exercising our discretion to deny institution under § 314(a).

7. *Conclusion on the Factors*

Because the analysis is fact-driven, no single factor is determinative of whether we exercise our discretion to deny institution under 35 U.S.C. § 314(a). On this record, after weighing all of the factors and taking a holistic view, we determine that the facts in this case that weigh against exercising discretion outweigh the facts that favor exercising discretion. Accordingly, we determine that the circumstances presented weigh against exercising our discretion to deny institution under § 314(a).

B. *Person of Ordinary Skill in the Art*

The level of skill in the art is a factual determination that provides a primary guarantee of objectivity in an obviousness analysis. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 1324 (Fed. Cir. 1999) (citing *Graham v. John*

Deere Co., 383 U.S. 1, 17–18 (1966); *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991)).

Petitioner asserts that a person of ordinary skill in the art at the time of the invention would be:

a medical practitioner, with experience using endovascular stent grafts and with training, experience, or familiarity applying principles of engineering to the design, development, or testing of endovascular devices; and/or an engineer having at least a bachelor of science degree and with several years of experience in the design, development, or testing of endovascular devices and their clinical use.

Pet. 22–23 (citing Ex. 1003 ¶¶ 26–28). Petitioner offers that “a higher level of education could reduce the number of years of experience required.” *Id.* at 23. Petitioner asserts also that a person of ordinary skill in the art “would be familiar with the design and operation of endovascular stent grafts and the equipment and tools required to treat a patient using an endovascular stent graft.” *Id.*

Patent Owner neither addresses Petitioner’s description of the level of ordinary skill in the art, nor provides its own description in the Preliminary Response.

At this stage of the proceeding, we adopt Petitioner’s definition as we find it is unopposed on the current record and appears to be consistent with the level of skill in the art at the time of the invention as reflected by the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

C. Claim Construction

The Board applies the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b). 37 C.F.R. § 42.100(b) (2020). Under that standard, claim terms “are generally given their ordinary and customary meaning” as understood by a

person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17). Extrinsic evidence is “less significant than the intrinsic record in determining ‘the legally operative meaning of claim language.’” *Phillips*, 415 F.3d at 1317.

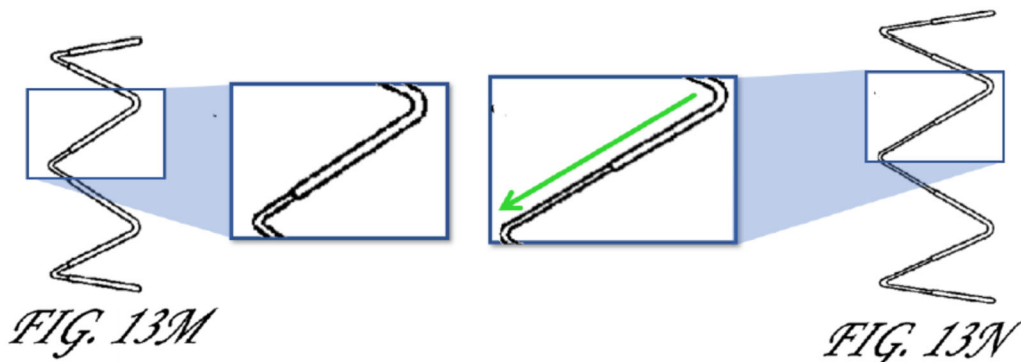
In the following discussion, we address the parties’ proposed claim constructions.

1. “telescoping arm”/ “telescoping arms”

Independent claims 1 and 26 recite the term “telescoping arms.” Claim 26 additionally refers to “each telescoping arm.” Petitioner asserts that the terms “telescoping arm” and “telescoping arms” should be construed according to their plain and ordinary meaning, in light of the intrinsic evidence. Pet. 24. Petitioner contends that “a ‘telescoping arm’ means ‘an arm that telescopes,’” and “‘telescoping arms’ means ‘more than one telescoping arm.’” *Id.* Petitioner asserts that the Specification makes clear that each arm must telescope because it repeatedly refers to “each telescoping arm.” *Id.* (citing Ex. 1001, 2:38–40). Petitioner also supports its contention by alleging that “every one of the ’393 patent’s figures depict that each arm telescopes.” *Id.* at 24–27 (referring to Ex. 1001, Figs. 4C, 12B, 13N).

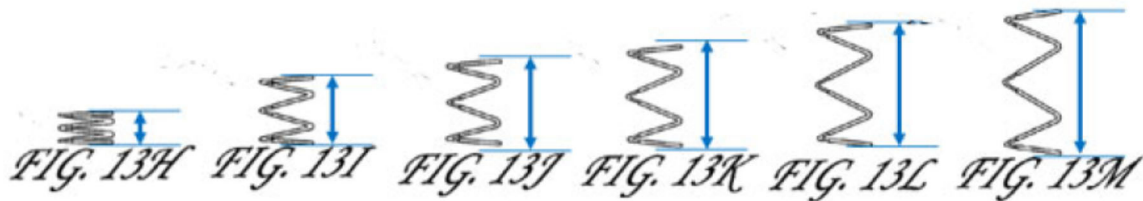
Patent Owner asserts that “[t]he correct construction of ‘telescoping arms’ (plural) is ‘arms that telescope in the manner of a presentation pointer and/or an accordion.’” Prelim. Resp. 15. Patent Owner asserts further that

“[t]he correct construction of a ‘telescoping arm’ (singular) is ‘one of the telescoping arms.’” *Id.* According to Patent Owner, the Specification explains that “the arms may telescope like a ‘presentation pointer’ and/or ‘an accordion.’” *Id.* (citing Ex. 2:36–41). In particular, Patent Owner contends that when the arms telescope like a presentation pointer, they “expand individually,” and such expansion “refers to the expansion of incrementally sized segments that are slidably received within one another.” *Id.* at 17. Patent Owner provides an annotated version of the ’393 patent Figures 13M and 13N, set forth below, to demonstrate this individual arm expansion. *Id.*



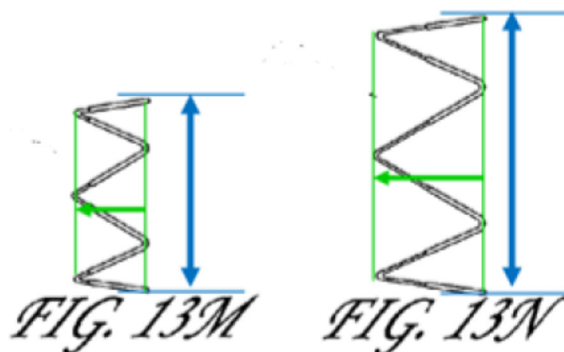
Patent Owner’s annotated version of the ’393 patent Figures 13M and 13N includes: (a) boxes around the portion of the depicted arm images that Patent Owner identifies as the arm that individually telescopes like a presentation pointer; and (b) a green arrow in the projected image of the boxed area in Figure 13M indicating what Patent Owner identifies as the direction of the individual arm telescoping expansion. *Id.*

Patent Owner asserts that when the arms telescope like an accordion, the arms “expand collectively (not individually) in the manner of an accordion.” *Id.* Patent Owner provides an annotated version of the ’393 patent Figures 13H –13M, set forth below, to demonstrate this accordion expansion that occurs “as the arms separate from one another as depicted in the following annotated Figures 13H through 13M. *Id.* at 17.



Patent Owner’s annotated version of the ’393 patent Figures 13H–13M includes blue markings to indicate what Patent Owner contends is the telescoping arms separating from one another and collectively expanding like an accordion. *Id.*

Additionally, Patent Owner provides an annotated version of the ’393 patent Figures 13M and 13N, set forth below, to support its position that the “telescoping arms in the shape of an M may telescope both like an accordion (blue) and like a presentation pointer (green).” *Id.*



Patent Owner’s annotated version of the ’393 patent Figures 13M and 13N includes blue markings to indicate what Patent Owner contends is the telescoping direction of the arms like an accordion and green markings to indicate what Patent Owner contends is the telescoping direction of the arms like a presentation pointer. *Id.*

Patent Owner asserts that Petitioner is mistaken when it asserts that the Specification description that “each telescoping arm may function like an accordion” requires each arm to individually “telescope[] like an accordion.” *Id.* at 17–18 (citing Ex. 1001, 2:39–40). Patent Owner emphasizes that

description “*does not state* that each telescoping arm itself is an accordion or *is similar to* an accordion.” *Id.* at 18. Patent Owner’s position is that because the Specification instead states that each arm “may function like an accordion,” Ex. 1001, 2:40, that means that “each telescoping arm may *function* like an accordion by separating from other telescoping arms like the bellows of an accordion.” Prelim. Resp. 18.

Patent Owner further asserts that Petitioner’s construction runs afoul of claim differentiation principles that require “the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Id.* at 21 (quoting *Phillips*, 415 F.3d at 1314). In particular, Patent Owner asserts that under Petitioner’s proposed construction, the recitation in claim 3 requiring the telescoping arms to be “configured so that an increase in the perimeter of variable length results in an increase in a height of the device” would be rendered superfluous. *Id.* at 21–22. According to Patent Owner, “[i]f each arm of the four arms in the shape of an M is required to individually telescope, then an increase in the perimeter of variable length would always result in an increase in height of the device.” *Id.* at 22.

We have considered the parties’ arguments and examined the claim language itself, the written description, and the prosecution history. We begin by noting that the claim terms themselves indicate that the “telescoping arm(s)” must telescope, as the term “arm” or “arms” recited in the claims is modified by the term “telescoping.” We then look to the Specification description of the term “telescoping arm(s),” set forth in the passage referenced by both parties:

The expandable attachment device comprises a plurality of telescoping arms that are attached to form an expandable ring. ***Each telescoping arm is similar to an expandable presentation pointer.*** Alternatively, each telescoping arm ***may function*** like an accordion.

Ex. 1001, 2:36–40 (emphasis added). The parties dispute whether this disclosure contemplates only arms that individually telescope, or whether it also encompasses a group of arms that telescope collectively, i.e., “telescope[] like an accordion.” Prelim. Resp. 17; Pet. 24. However, for purposes of this Decision, we need not resolve that dispute, as the parties agree that the Specification expressly discloses that a telescoping arm includes embodiments wherein an arm is expandable similar to a presentation pointer. *See* Pet. 24–27; Prelim. Resp. 15–17. Whether an alternative form of a telescoping arm may exist, and what that form would be is not implicated in the challenges presented by Petitioner or the arguments raised by Patent Owner to those challenges, as Petitioner relies on the prior art as teaching this claim element by disclosing an arm that telescopes similar to an expandable presentation pointer. *See, e.g.*, Pet. 38–39, 66–67.

Accordingly, for purposes of this decision, we need not construe the full scope of the terms “telescoping arm” and “telescoping arms” as we agree with the parties that these terms at least include embodiments wherein each arm is individually expandable similar to a presentation pointer, which is the only embodiment relied upon by Petitioner for its grounds challenging the ’393 patent claims.⁹

⁹ We note that the District Court’s preliminary constructions for these claim terms are the “[p]lain and ordinary meaning,” without further discussing what that meaning is. *See* Ex. 1059, 2.

2. “*shape of M*”/ “*shape of multiple Ms*”/ “*M configuration*”

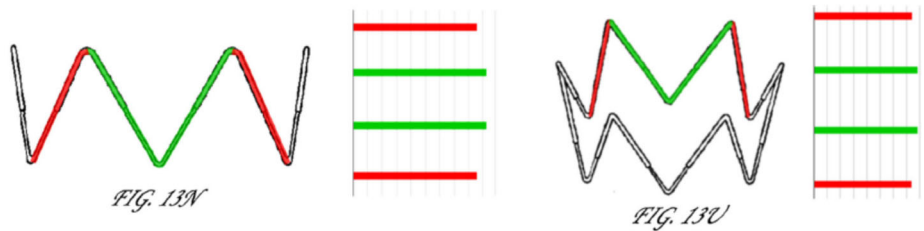
The term “shape of M” appears in claims 1 and 2. The term “shape of multiple Ms” appears in claim 2. The term “M configuration” appears in claim 26. The parties agree that these variations share the same meaning. *See* Pet. 29–31, Prelim. Resp. 22 n.8. However, as discussed below, they dispute what that meaning is.

Petitioner asserts that these claim terms should be given their plain and ordinary meaning, which “can include ‘M’ shapes in which the arms forming an M are equal in length as well as M shapes in which the arms differ in length.” Pet. 29 (citing Ex. 1003 ¶ 120). In support of that contention, Petitioner refers to the two instances where the Specification describes telescoping arms in an “M configuration,” noting that neither instance “shows, provides, explains, or discusses any specific shape of the ‘M configuration.’” *Id.* at 30 (citing Ex. 1001, 5:36–46; 6:37–40).

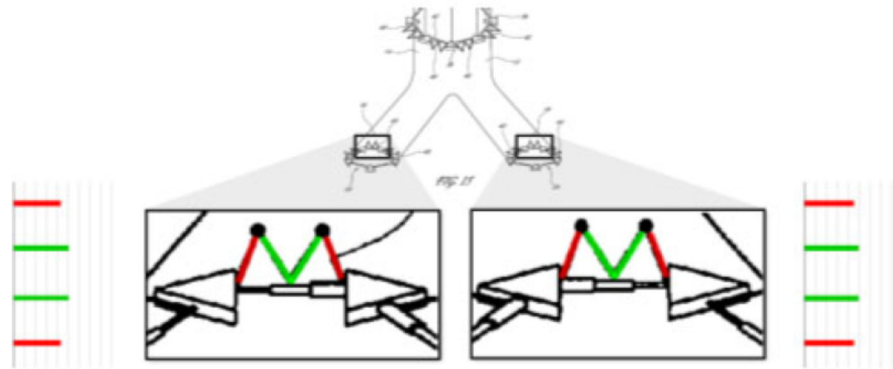
Additionally, Petitioner refers to Figures 13 and 15 of the ’393 patent to demonstrate that the arms of the M shape need not differ in length as those figures depict the “M configuration” as an “M” with arms of equal length. *Id.* (citing Ex. 1001, Figs. 13A–13U, 15). Petitioner notes also that the Board has affirmed a written description rejection of claims in Patent Owner’s continuation application that recited an “M” with different-length arms, finding insufficient evidence that “mere reference to an ‘M’ would be recognized by one of ordinary skill in the art as necessarily providing shorter middle struts or different angles between legs.” *Id.* at 30–31 (quoting Ex. 1048, 330–31 (Board Decision affirming the written description rejection of claims 35, 36); and citing Ex. 1048, 213 (Examiner’s rejection of claims 35, 36 of US Application No. 11/484, 331 for failing to comply with written description under 35 U.S.C. 112)).

Patent Owner asserts that the “shape of M” means “the shape of a capital letter M which consists of four arms where the pair of inner arms and the pair of outer arms differ in length.” Prelim. Resp. 22. In support of this proposed construction, Patent Owner relies on the distinction made in the Specification between the springs in the shape of a “M” and those in the shape of a “V.” *Id.* at 22–23 (citing Ex. 1001, 6:35–37). Patent Owner refers also to the portion in the prosecution history wherein the Applicant argues in response to an Office Action that “the telescoping arms form something similar to a particular shape (e.g., a M or a V shape).” *Id.* at 23 (citing Ex. 1002, 149, Application No. 10/624,864, “Amendments, Response to Office Action and Interview Summary,” dated September 2005). Additionally, Patent Owner notes that claims 1 and 14 distinguish between the shape of “M” and the shape of “V.” *Id.* Patent Owner contends that such distinction is that an M-shape has inner arms of a different length than the outer arms, whereas a V-shape has two arms of equal length. *Id.* According to Patent Owner, “if two inverted adjacent Vs (which have four arms of the same length) were to be treated as an M, it would have been unnecessary for Applicant to disclose both shapes in the claims, the specification, and the prosecution history—because disclosing M would have sufficiently covered V (and vice versa).”

Patent Owner urges that its annotated versions of Figures 13N, 13V, and 15 are consistent with the plain and ordinary meaning of the “shape of M,” alleging that those figures demonstrate that the shape has arms of different lengths. *Id.* at 24; PO Sur-reply 3. Patent Owner’s annotated versions of Figures 13N, 13V, and 15 are set forth below:



'393 Patent, Figures 13N and 13U (annotated and measured).



'393 Patent, Figure 15 (annotated and measured).

Patent Owner's annotated versions of Figures 13N, 13V, and 15 highlight the outer arms of M shape in red and the inner arms of the M shape in green, and include graphs purporting to show the different measured lengths of the inner and outer arms of the M shape. *Id.*

Based on the current record, we find that Patent Owner's proposed construction is inadequately supported by the evidence that it asserts. Specifically, we do not find that the Specification or the identified portions of the prosecution history limit the shape of M so as to require that inner arms be of a different length than the outer arms. Insofar as Patent Owner asserts that the Specification and prosecution history distinguish M shapes from V shapes, we find that any such distinction begins and ends with the number of arms that the shape contains, i.e., the M having 4 arms and the V having 2 arms. We find the record is completely silent on the issue of the

lengths of the arms contained in the M. Patent Owner’s annotated versions of Figures 13N, 13V, and 15 do not suggest otherwise, as we are unable to appreciate from those figures any meaningful difference in the lengths of the inner and outer arms. Moreover, as the Federal Circuit has explained, “patent drawings do not define the precise proportions of the elements depicted and may not be relied on to show particular sizes if the specification is completely silent on the issue.” *Source Vagabond Sys. Ltd. v. Hydrapak, Inc.*, 753 F.3d 1291, 1300 (Fed. Cir. 2014). Indeed, Patent Owner appears to acknowledge that the Specification figures cannot be relied upon to support its assertion that the M shapes depicted therein have different measured lengths for the inner and outer arms. *See* Sur-reply 3 (Patent Owner stating that it “is *not* relying on those figures as *the* written description support for the ‘shape of M’”).

Accordingly, for purposes of this Decision, we give the claim terms “shape of M,” “shape of multiple Ms,” and “M configuration” their plain and ordinary meaning, which can include “M” shapes wherein the arms forming an M are equal in length, as well as “M” shapes wherein the arms differ in length.¹⁰

3. “endovascular apparatus”

The term “endovascular apparatus” appears in the preambles of independent claims 1 and 26. The preamble of claim 1 recites, “[a]n attachment device that is expandable from a first state to a second state for securing an endovascular apparatus to an interior wall of a lumen.” The preamble of claim 26 similarly recites, “[a]n attachment device that is

¹⁰ We note that the District Court’s preliminary construction for these claim terms is also the “[p]lain and ordinary meaning,” without, however, further discussing what that meaning is. *See* Ex. 1059, 3–4.

expandable from a first state to a second state for securing an endovascular apparatus to an interior wall of a lumen.” According to Petitioner, the preambles are not limiting because they fail to recite “essential structure or steps, ...[and are not] ‘necessary to give life, meaning, and vitality’ to the claim.” Pet. 31 (quoting *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002)). Petitioner asserts that, even if the preambles are limiting, the term “endovascular apparatus” should be given its plain and ordinary meaning, which does not include any functional requirement, such as the treatment of aneurysms or arterial blockages. *Id.*

Patent Owner disagrees with Petitioner as to both points. First, according to Patent Owner, the preambles are limiting because they recite essential structure that is not included in the body of the claims, i.e., “an attachment device.” Prelim. Resp. 27.

We agree with Patent Owner that the preambles are necessary to give meaning to the claims. Without the preambles, the devices comprising the structure set forth in the body of the claims are unidentifiable, as claim 1 recites the device comprises “a plurality of telescoping arms” operatively connected to form a perimeter and operatively coupled at an angle to form the shape of an M, and claim 26 recites that the device comprises “[a] plurality of telescoping arms forming a closed loop” that are connected and coupled together in an M configuration. Thus, we determine that the preambles are limiting.¹¹

Second, Patent Owner urges that the term “endovascular apparatus” in the preamble should be construed to mean an “endovascular graft for the

¹¹ We note that District Court also determined that the preambles are limiting. *See* Ex. 1059, 1.

treatment of aneurysms or arterial blockages.” Prelim. Resp. 28. To support this construction, Patent Owner refers to the title of the ’393 patent and disclosures therein describing the apparatus for the repair of aneurysms and arterial blockages, and for the treatment of aneurysms or arterial blockages. *Id.* at 29. According to Patent Owner, its proposed construction does not import functional limitations into the term, but instead includes the phrase “for the treatment of aneurysms or arterial blockages” to describe the type of graft claimed. *Id.* n.11.

Based upon our consideration of the arguments and evidence, and in view of the intrinsic record, we give the term “endovascular apparatus” its plain and ordinary meaning, which we determine to be “a prosthetic graft/stent that may be placed in and attached to an interior wall of a lumen.” We find that the Specification adheres to this plain and ordinary meaning. *See* Ex. 1001, 1:10–11 (describing securing the endovascular apparatus to an interior wall of a lumen); *id.* at 1:32–33 (describing placement of a prosthetic graft within the lumen of the artery); *id.* at 2:3–5 (describing the endovascular apparatus as a graft or stent for attachment to the interior wall of a lumen). Although the Specification refers to the use of the apparatus to treat aneurysms or arterial blockages, we do not find any description limiting the claimed endovascular apparatus to the type of graft only used for such treatments.¹²

¹² We note that the District Court’s preliminary construction for this claim phrase is also the “[p]lain and ordinary meaning,” without, however, discussing what that meaning is. *See* Ex. 1059, 3.

4. “operatively connected to . . . form a perimeter of variable length”/
“operatively coupled to . . . form the shape of a M”

Petitioner asserts that the “operatively connected” and “operatively coupled” phrases should be given their plain and ordinary meaning, i.e., “distinct structures functionally [connected/coupled].” Pet. 31–32. Petitioner argues that nothing in the intrinsic record justifies importing functional limitations into these terms. *Id.* at 32.

Patent Owner asserts that the “operatively connected” phrase should be construed to mean “the arms being connected to one another to form a perimeter of variable length *capable of reducing leakage around the perimeter of the tubular sleeve.*” Prelim. Resp. 30 (emphasis added). In support of its proposed construction, Patent Owner refers to the Federal Court’s explanation in *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1118 (Fed. Cir. 2004) that the claim term “operatively connected,” in general, “means the claimed components must be connected in a way to perform a designated function.” Prelim. Resp. 31–32. Patent Owner asserts that, here, the Specification describes the designated function of the operatively connected telescoping arms is “‘to form a perimeter of variable length’ to ‘reduce leakage around the perimeter of the tubular sleeve.’” *Id.* at 32.

Based on our review of the current record, we find that Patent Owner is only partially correct. While we agree that the “operatively connected” phrase requires the telescoping arms to perform a designated function, the claim language itself recites what that function is, i.e., “to form a perimeter of variable length.” Patent Owner’s proposed construction includes additional language requiring an additional function, i.e., reducing leakage around the perimeter of the tubular sleeve. Prelim. Resp. 31–32. The

portions of the Specification that Patent Owner relies upon for adding that additional function in its proposed construction is unavailing.

In particular, Patent Owner refers to the Specification description of an embodiment that uses a plurality of M springs attached to the cranial end of the tubular sleeve as graft expanders to hold the sleeve open. Prelim. Resp. 31 (citing Ex. 1001, 6:26–27). The Specification explains that, in such embodiment, “the M springs 68 may reduce leakage around the perimeter of the tubular sleeve.” Ex. 1001, 6:26–27. The “M springs” are a separate element from the telescoping arms (that form the shape of an M), as may be appreciated by the description following the above-quoted statement, which explains that “the M springs 68 may be replaced by telescoping arms 40 in an “M configuration.”” *Id.* at 6:39–40. Further, there is no disclosure that the M springs are “operatively connected” to reduce leakage.

Moreover, the Specification states only that the M springs “may” reduce leakage, but do not *require* them to operate in that manner or to even have that capability. Thus, to the extent that the description of the M springs relied upon by Patent Owner may also be viewed to apply to the telescoping arms in an M configuration, as those elements are disclosed as being interchangeable, the disclosure does not require the operatively connected telescoping arms to be capable of reducing leakage around the perimeter. Thus, we decline to include such a requirement in our construction on the current record.

Accordingly, we preliminarily construe the phrase “operatively connected to . . . form a perimeter of variable length” to mean that the telescoping arms are “connected or joined together in a manner that functions to form or create a perimeter of variable length.”¹³

Patent Owner asserts that the “operatively coupled” phrase should be construed to mean “the telescoping arms are positioned in *multiple planes* at an angle so that multiple telescoping arms form the shape of a M *capable of exerting enough radial force when expanded to fix into the aorta and thereby reduce blood leaks around the endovascular graft.*” Prelim. Resp. 30–31. In support of this proposed construction, Patent Owner relies on the Specification description that “the telescoping arms 40 may be positioned in multiple planes in, for example, what is referred to herein as an ‘M configuration,’” and “[o]ne possible advantage of the M configuration is that it may produce superior radial force for holding the attachment device in position.” Ex. 1001, 5:36–38, 39–41; Pet. 32–33. Patent Owner also relies on the discussion in the “Background” section of the Specification that the desired new attachment device should “exert enough radial force when expanded to fix into the aorta and thereby reduce blood leaks around the apparatus.” Ex. 1001, 1:55–60; Pet. 32–33.

Based on the current record, we find that Patent Owner’s construction again seeks to import additional functional language from the Specification that has not been claimed. The language of claim 1 sets forth the function achieved by the operatively coupled telescoping arms by reciting that the

¹³ We note that this construction is consistent with the District Court’s preliminary construction for this claim phrase. *See* Ex. 1059, 3 (construing “operatively connected” to mean “the arms being connected to one another so as to form a perimeter that has a varying length as each arm telescopes”).

arms are “operatively coupled to one another at an angle *so that multiple telescoping arms form the shape of a M.*” Thus, the function provided by the coupling is forming the shape of an M. The “possible advantage,” described by the Specification, that results from an M configuration, i.e., “superior radial force for holding the attachment device in position” and a goal that such attachment will reduce blood leaks around the apparatus go beyond the scope of what is claimed. Thus, we decline to include that function and intended purpose in our preliminary construction. We also decline to add the term “multiple planes” to describe the positioning of the telescoping arms, as the claim itself describes the required position of the coupled arms by reciting that they are “at an angle,” which we give its plain and ordinary meaning.

Accordingly, we preliminarily construe the phrase “operatively coupled to . . . form the shape of a M” to mean that “the telescoping arms are coupled or joined together at an angle in a manner that functions to form the shape of an M.”¹⁴

D. Obviousness over Quiachon and Lazarus

Petitioner asserts that claims 1, 2, 4, 11, and 26 are rendered obvious by the combined teachings of Quiachon and Lazarus. Pet. 36–61. Patent Owner disagrees. Prelim. Resp. 47–62.

¹⁴ We note that this construction is consistent with the District Court’s preliminary construction for this claim phrase. *See* Ex. 1059, 3 (construing “operatively coupled” to mean “the telescoping arms are functionally coupled to one another at an angle so that multiple telescoping arms form the shape of a M”).

1. Quiachon

Quiachon “relates to an improved system and method for emplacing a prosthesis and, more particularly, to a delivery catheter and method of use for placement within a corporeal lumen of a bifurcated graft having attachment systems.” Ex. 1004, 1:12–16. Quiachon describes an “intraluminal delivery system for securing a prosthesis within or between vessels or corporeal lumens of an animal, such as a human.” *Id.* at 2:36–38.

An embodiment of Quiachon’s system is depicted in Figure 17, set forth below.

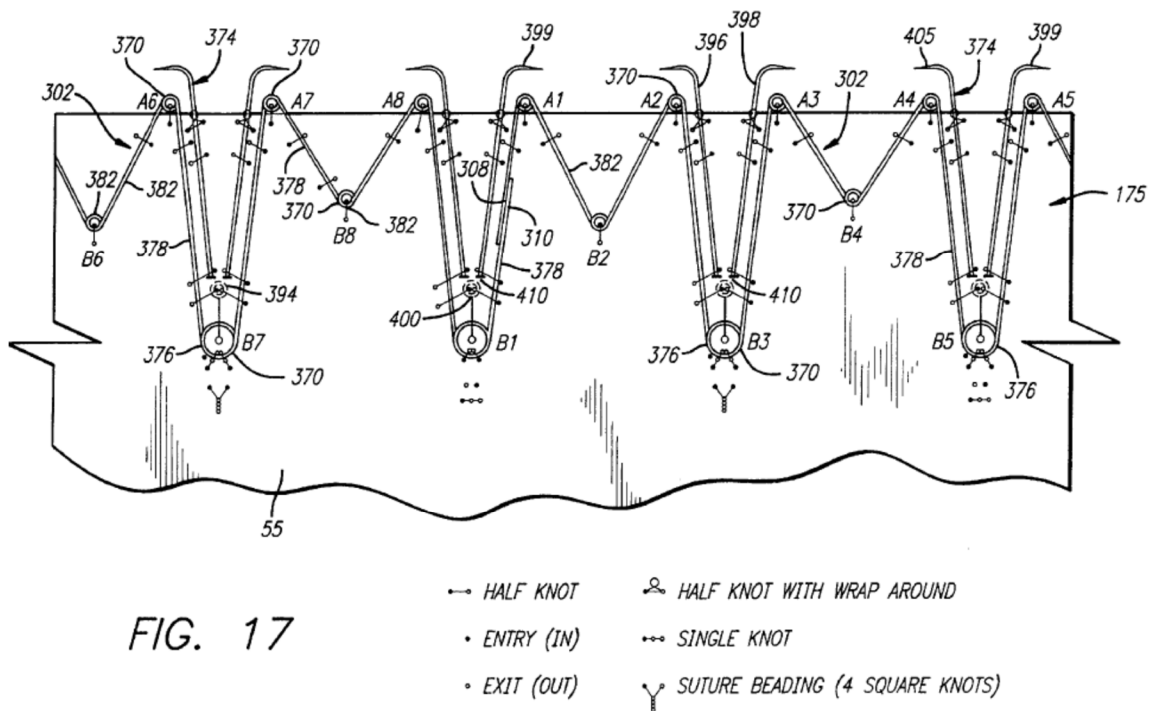


Figure 17 is a plan view of the inside of a graft cut longitudinally, showing an attachment system as sewn into the main tubular member of the graft. *Id.* at 4:49–51. Quiachon describes that its “attachment system [175] serves to yieldably urge” graft 55 “from a first compressed or collapsed position to a second expanded position and provides a fluid tight seal between the graft

and corporeal lumen wall.” *Id.* at 15:3–4, 10–14. Quiachon explains that the attachment system includes sinusoidal wire frame 302 that “is wound into helical coils or helices [370] with one and a half rotations and include apices A1 through A8.” *Id.* at 15:15–16, 26–28, 49–51.

Quiachon further discloses that “[e]ach of the protruding apices A1 through A8 are integrally connected to adjacent base apices B1 through B8 by struts 378,” in which “not all of the struts are of equal length,” but “[r]ather, the length of the struts are configured to stagger the apices along different planes that are spaced longitudinally apart and are perpendicular to the axis of the graft 55.” *Id.* at 15:37–43. Quiachon states that “[i]t is an important objective of the present invention to create a narrow profile for the attachment system 175 when the attachment system is constricted radially.” *Id.* at 15:43–46. According to Quiachon, “[s]ince the helical apices tend to have a greater radial width than the struts, staggering the apices serves the purpose of creating a narrow profile for insertion into a capsule.” *Id.* at 15:46–49. The pattern of struts 378 “accomplishes the purpose of minimizing the radial profile of the graft in [a] collapsed position.” *Id.* at 15:54–55.

Quiachon further discloses that its attachment system also includes V-shaped lumen piercing members 374 that fit between struts 378 and are “adjacent to apices B1, B3, B5 and B7 in a close proximal relationship.” *Id.* at 15:64–66.

2. *Lazarus*

Lazarus “relates . . . specifically to grafts positionable intraluminally for repairing aneurysms or other vascular defects in humans.” Ex. 1006, 1:8–11. According to Lazarus, “[t]he most commonly used intraluminal graft structures have hooks or barbs which pierce into or through the wall of

the vessel to anchor the graft to the vessel above the aneurysm” and it would “be advantageous to provide an intraluminal graft structured to be flexible and adjustable to thereby facilitate insertion and placement of the graft within a vessel which displays abnormal morphology.” *Id.* at 1:53–56, 2:10–14.

An embodiment of Lazarus’ graft is depicted in Figure 7, set forth below.

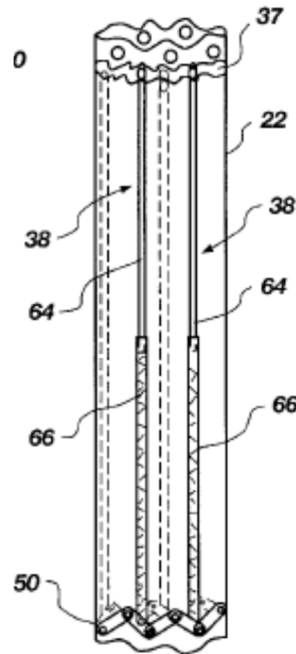


Fig. 7

Figure 7 is an elevational view of a vascular graft having longitudinal support structures. *Id.* at 8:9–11. The vascular graft includes circumferential support structures such as expandable cranial ring 37 and flattened ring 50 that provides an automatic self-expanding capability. *Id.* at 9:3–6, 25–29. Lazarus discloses that its vascular graft further includes tubular body 22 that is “adjustable with the longitudinal support structures” such as “longitudinal support structures 38 . . . comprising a first support member 64 and a second support member 66 telescopically positioned

relative to each other.” *Id.* at 10:31–38. Lazarus explains that “once deployed in the diseased vessel, the length of the longitudinal support structures 38 may be modified to provide an optimal fit within the vessel.” *Id.* at 10:38–41.

3. Discussion

A patent claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are such that the subject matter, as a whole, would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at 416. Notwithstanding what the teachings of the prior art would have suggested to one with ordinary skill in the art at the time of the patent’s invention, the totality of the evidence submitted, including objective evidence of nonobviousness, may lead to a conclusion that the challenged claims would not have been obvious to one with ordinary skill in the art. *In re Piasecki*, 745 F.2d 1468, 1471–72 (Fed. Cir. 1984). Objective evidence of nonobviousness, so called “secondary considerations,” may include long-felt but unsolved need, failure of others, unexpected results, commercial success, copying, licensing, and praise. *See Graham*, 383 U.S. at 17–18; *Leapfrog Enters., Inc. v. Fisher–Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).¹⁵

¹⁵ At this stage in the proceeding, Patent Owner does not assert or present evidence of objective indicia supporting nonobviousness of the challenged claims. *See Prelim. Resp.*

Petitioner asserts that Quiachon's "self-expanding superior attachment system 175," depicted in Quiachon's Figures 14–19, is "[a]n attachment device that is expandable from a first state to a second state for securing an endovascular apparatus to an interior wall of a lumen," as recited by challenged claim 1, because the reference teaches that it "serves to yieldably urge the graft 55 from a first compressed or collapsed position to a second expanded position and provides a fluid tight seal between the graft and corporeal lumen wall." Pet. 36–37 (quoting Ex. 1004, 15:3–14, 26:43–47, 29:34–37). Petitioner asserts also that Quiachon's "attachment system" discloses the claimed "attachment device" because "both components are expandable rings that function like stents and hold an endovascular graft open at the aneurysm site." *Id.* at 37.

Petitioner contends that Quiachon discloses a plurality of arms, i.e., struts, that connect each eight outward protruding apices, A1–A8, to adjacent base apices B1–B8, as shown in Quiachon's Figure 17. *Id.* (citing Ex. 1004, 15:29–32, Fig. 17). Petitioner acknowledges that those arms do not telescope. *Id.* For the telescoping limitation in claim 1, Petitioner relies on Lazarus, asserting that reference discloses a plurality of telescoping arms as "longitudinal support structures having telescoping members." *Id.* at 39 (citing Ex. 1006, 4:7–9, 3:36–37, 4:10–20, 10:28–40, Fig. 7).

According to Petitioner, it would have been obvious to combine the struts of Quiachon with the telescoping longitudinal support structures of Lazarus because both references: (a) are directed to "maximally compressing a stent and successfully expanding the stent at the site of an aneurysm for a secure fit;" and (b) provide the advantages for its disclosed design. *Id.* at 40 (citing Ex. 1003 ¶¶ 142–153). In particular, Petitioner asserts that a person of ordinary skill in the art would have been motivated to use the known

telescoping arms disclosed in Lazarus to further improve Quiachon's disclosed attachment system to predictably achieve a compressible expandable device that could hold an endovascular graft open at the site of an aneurysm that has the flexibility and adjustability disclosed in Lazarus. *Id.* 40–41 (citing Ex. 1003 ¶¶ 146–147; Ex. 1006, 2:10–14).

Petitioner asserts that a skilled artisan would have had a reasonable expectation of success in combining these features of Quiachon and Lazarus because both references disclose devices directed to the same technology, i.e., endovascular stent grafts for treating aneurysms. *Id.* at 42–43 (citing Ex. 1003 ¶¶ 143, 149–150). Additionally, Petitioner asserts that the skilled artisan would have had a reasonable expectation of success because the combination involves simply using one known stent-type support for endovascular grafts, i.e., Lazarus' telescoping arms, for another element known for such use, i.e., Quiachon's struts, to predictably provide an improved strut that telescopes. *See id.* (citing Ex. 1003 ¶ 140).

Petitioner asserts that its proposed combination of Quiachon and Lazarus also discloses that the telescoping arms are “operatively connected to one another so as to form a perimeter of variable length,” as required by claim 1. *Id.* at 43. Specifically, Petitioner relies on Quiachon's teaching that “[e]ach of the protruding apices A1 through A8 are integrally connected to adjacent base apices B1 through B8 by struts 378,” and that the struts are connected using helical coils 370. *Id.* at 43, 45 (quoting Ex. 1004, 15:36–39, 15:29–35; Ex. 1003 ¶¶ 154–157) (emphasis added by Petitioner). Petitioner asserts also that, in Quiachon, the connected struts form a perimeter of variable length because the perimeter of the device changes in length as the stent radially expands. *Id.* at 44 (citing Ex. 1004, 15:3–5, 15:10–14; Ex. 1003 ¶¶ 154–157).

Petitioner asserts that its proposed combination of Quiachon and Lazarus further discloses that the telescoping arms are “operatively coupled to one another at an angle so that multiple telescoping arms form the shape of a M,” as required by claim 1. *Id.* at 45. Here, Petitioner relies again on Quiachon as disclosing that the struts 378 are coupled using helical coils 370, and that coupling occurs at an angle so that multiple struts/arms form the shape of an M, as depicted in Quiachon’s figures. *Id.* at 46, 48; Ex. 1004, 15:29–40, Figs. 14–19; Ex. 1003 ¶¶ 161–172.

At this stage in the proceeding, we determine that Petitioner’s foregoing assertions are supported by the cited references and the testimony of Petitioner’s declarant, Dr. Chaikof. Based on the current record, we determine that Petitioner has shown sufficiently for institution that a person of ordinary skill in the art would have been motivated to modify Quiachon’s attachment system to include the telescoping arms disclosed by Lazarus with a reasonable expectation of successfully providing an attachment device comprising each element recited in claim 1. In reaching these determinations, we have considered Patent Owner’s arguments. However, as explained in the following discussion, we do not find those arguments sufficiently supported at this stage in the proceeding to deny the Petition.

Patent Owner contends that “Quiachon does not teach or suggest ‘arms,’ telescoping or otherwise, that ‘are operatively coupled to one another at an angle so that multiple telescoping arms form the shape of a M.’” Prelim. Resp. 47–48. Specifically, Patent Owner relies on its proposed construction for “operatively coupled” and asserts that the arms in Quiachon’s system are not “positioned in multiple planes at an angle so that multiple telescoping arms form the shape of a M capable of exerting enough radial force when expanded to fix into the aorta and thereby reduce blood

leaks around the endovascular graft.” *Id.* at 48. However, as discussed above in Section II.C.4., we have declined to preliminarily construe the term “operatively coupled” in that manner.

Instead, we have found that the phrase “operatively coupled to . . . form the shape of a M” means that “the telescoping arms are coupled or joined together at an angle in a manner that functions to form the shape of a M.” Petitioner has shown sufficiently for institution that Quiachon in view of Lazarus discloses this element. In that regard, Petitioner has shown persuasively that Quiachon explains that, in its system, “[e]ach of the protruding apices A1 through A8 are integrally connected to adjacent base apices B1 through B8 *by struts 378*,” and that the struts are connected using helical coils 370. Pet. 43, 45 (quoting Ex. 1004, 15:36–39). In other words, Quiachon’s struts or arms are coupled together using helical coils, and that coupling occurs at an angle resulting in their forming the shape of an M, as depicted in Quiachon’s figures. *Id.* at 46, 48; Ex. 1004, 15:29–40, Figs. 14–19; Ex. 1003 ¶¶ 161–172. Insofar as Patent Owner asserts that Quiachon’s struts are not operatively coupled because helical coils are used to connect or couple the struts together, we disagree as claim 1 does not restrict the use of such a coupling means.

Next, Patent Owner argues that “Quiachon does not disclose arms or ‘struts,’ whether telescoping or not, in ‘the shape of a M.’” Prelim. Resp. 53. Patent Owner asserts that Quiachon does not disclose any M-shaped elements and does not use the letter ‘M’ to describe any elements of the stent graft system.” *Id.* at 53–54. According to Patent Owner, Quiachon describes the shapes formed by the struts connected to helical coils, and the lumen piercing members connected to helical coils, as a V. *Id.* at 53 (citing Ex. 1004, 15:60–66). We, however, find that argument lacks merit as

Quiachon states, in the passage cited by Patent Owner, that it is the “lumen piercing members 374 which are bent into the shape of a vee,” and those “V-shaped lumen piercing members 374 will fit between the struts 378 adjacent to apices B1, B3, B5 and B7 in a close proximal relationship.” Ex. 1004, 15:64–66. The passage cited by Patent Owner does not describe the struts having a V-shape. Instead, as Petitioner has demonstrated, Quiachon depicts those connected struts as having an “M” shape. *See* Pet. 45–46, 48; Ex. 1004, 15:29–40; Ex. 1003 ¶¶ 161–172; Figures 14–19.

Patent Owner additionally contends that a person of ordinary skill in the art would not have been motivated to combine Quiachon and Lazarus because “[t]here is nothing in Lazarus to suggest using telescoping support structures in connection with circumferential expansion to position a stent graft within a vessel.” Prelim. Resp. 58. Patent Owner asserts that Petitioner mistakenly argues that “the longitudinal (not circumferential) support structures [in Lazarus] circularly expand like telescoping arms in the ’393 patent—they do not.” *Id.* at 56 (citing Pet 34). We do not understand Petitioner to have made that argument. Rather, on the page cited by Patent Owner, Petitioner focuses on vertical extension of Lazarus’ telescoping arms and refers to the disclosure that they “provide an optimal fit within the vessel.” *See* Pet. 34 (quoting Ex. 1006, 10:33–41).

Patent Owner contends a skilled artisan would not have been motivated to combine Quiachon and Lazarus with a reasonable expectation of success because Quiachon’s device, which uses piercing members with hooks or barbs to attach its graft to a vessel, is allegedly incompatible with Lazarus’ device, which avoids the use of hooks and barbs by instead fixing its graft tube to the interior wall of the vessel via an inducement of an inflammatory response between the outer surface of the intraluminal

vascular graft and the inner wall of the vessel. Prelim. Resp. 58–59 (citing Ex. 1004, 16:47–59; Ex. 1006, 1:58–64, 4:40–47). Based on those differences, Patent Owner asserts that the references teach away from one another. *Id.* at 59.

We do not find Patent Owner’s argument availing, as Petitioner’s proposed combination of Quiachon and Lazarus does not involve modifying Lazarus to include hooks and barbs. Indeed, Petitioner’s proposed combination does not involve modifying Lazarus at all. Rather, Petitioner combines one element from Lazarus, the telescoping arm, with Quiachon’s attachment system. Patent Owner does not direct us to any teaching in Quiachon or Lazarus that would discourage such a modification or suggest that Lazarus’ telescoping arms would be incompatible as the arms in Quiachon’s attachment system. To the contrary, Petitioner has demonstrated their compatibility by, for example, referring to Lazarus’ teaching that “the length of the longitudinal support structures may be modified.” Pet. 35 (quoting Ex. 1006, 10:38–40). Moreover, as discussed above, Petitioner provides ample motivation for the combination, including Lazarus’s teaching that its telescoping arms allow a vascular graft “to be flexible and adjustable to thereby facilitate insertion and placement of the graft within a vessel.” *Id.* (quoting Ex. 1006, 2:10–14).

Based on the foregoing, we determine that Petitioner has established a reasonable likelihood of successfully demonstrating that independent claim 1 is rendered obvious over the combined teachings of Quiachon and Lazarus. Petitioner has also addressed the additional limitations in each of the challenged dependent claims, and demonstrated sufficiently how the combined references teach or suggest those limitations. *See* Pet. 52–55.

Patent Owner does not separately address any of the challenged dependent claims. *See* Prelim. Resp.

Additionally, Petitioner has addressed each limitation in independent claim 26, and demonstrated sufficiently how the combined references teach or suggest those limitations. *See* Pet. 57–61. Patent Owner addresses claim 26 only by asserting that its arguments regarding claim 1 apply with equal force to claim 26. Prelim. Resp. 62. To the extent those arguments apply to the limitations of claim 26, we find them inadequately supported on the current record for the reasons similar to those discussed for claim 1.

Accordingly, we determine that Petitioner has shown a reasonable likelihood of prevailing on its assertion that claims 1, 2, 4, 11, and 26 are rendered obvious by the combined teachings of Quiachon and Lazarus.

E. Obviousness over Quiachon, Lazarus, and Lau

Petitioner asserts that claim 10 is rendered obvious by the combined teachings of Quiachon, Lazarus, and Lau. Pet. 61–64. Patent Owner disagrees. Prelim. Resp. 62–63. We incorporate our discussion of Quiachon and Lazarus above, in Section II.D., here.

1. Lau

Lau discloses a device that “is a foldable stent or stent-graft which may percutaneously [be] delivered with (or on) a catheter, typically an endovascular catheter, to a body cavity or lumen and then expanded.”

Ex. 1007, 1:13–16. Lau further discloses that

a variety of materials variously metallic, super-elastic alloys, and preferably nitinol, are suitable for use in these stents. Primary requirements of the materials are that they be suitably springy even when fashioned into very thin sheets or small diameter wires. Various stainless steels which have been physically, chemically, and otherwise treated to produce high springiness are

suitable as are other metal alloys such as cobalt chrome alloys (e.g., ELGILOY), platinum/tungsten alloys, various titanium alloys, and especially the nickel-titanium alloys generically known as “nitinol”.

Id. at 13:33–43.

2. Discussion

Claim 10 depends from claim 1 and further recites, “wherein the arms are made of a nickel-titanium alloy.” Petitioner relies on Quiachon and Lazarus here for the limitations of claim 1 in a similar manner as discussed above in Section II.D. regarding the combination of Quiachon and Lazarus. Pet. 61–64. Additionally, Petitioner relies on Lau to reach the additional limitation of claim 10. *Id.* Specifically, Petitioner refers to Lau’s teaching that “metal alloys such as cobalt chrome alloys (e.g., ELGILOY) platinum/tungsten alloys, and especially the nickel-titanium alloys generically known as ‘nitinol’” are suitable materials for its stents. *Id.* at 63 (quoting Ex. 1007, 13:38–43). According to Petitioner, a person of ordinary skill in the art would have been motivated by Lau to use a nitinol material for the arms in the modified Quiachon and Lazarus attachment device, because Lau discloses that nitinol is a preferred choice to the cobalt chrome alloy (ELGILOY) disclosed in Quiachon, and Lazarus further explains that its support structures may be constructed of any suitable material which provides flexibility, which nitinol was known to do. *Id.* at 63 (citing Ex. 1003 ¶¶ 213, 215–216).

Based on the foregoing and our review and consideration of the current record, we determine that Petitioner has established a reasonable likelihood of successfully demonstrating that dependent claim 10 is rendered obvious over the combined teachings of Quiachon, Lazarus, and Lau. Patent Owner challenges this ground only by alleging that it fails for the same

reasons asserted for the ground based on the combination of Quiachon and Lazarus and that Lau does not cure the alleged deficiencies in that combination. Prelim. Resp. 63. To the extent those arguments raised regarding the combination of Quiachon and Lazarus apply here, we find them inadequately supported on the current record for the reasons similar to those discussed for claim 1.

Accordingly, we determine that Petitioner has shown a reasonable likelihood of prevailing on its assertion that claim 10 is rendered obvious by the combined teachings of Quiachon, Lazarus, and Lau.

F. Obviousness over Hartley and Lazarus

Petitioner asserts that claims 1, 2, 4, 10, 11, and 26 are rendered obvious by the combined teachings of Hartley and Lazarus. Pet. 64–86. Patent Owner disagrees with this contention. Prelim. Resp. 63–74. Because we have determined that Petitioner has demonstrated a reasonable likelihood that it would prevail in showing the unpatentability of each challenged claim based combinations including Quiachon and Lazarus or Quiachon, Lazarus, and Lau, we only briefly address this ground challenging the same claims over the combination of Hartley and Lazarus for purposes of this Decision. In doing so, we incorporate our discussion of Lazarus above, in Section II.D., here.

1. Hartley

Hartley “relates . . . to endoluminal aortic stents and a method of deployment of such stents which allows accurate placement of a covered stent in the aorta.” Ex. 1005, 1:4–7. Hartley describes that its stents are “capable of being deployed and positioned accurately above the renal arteries in the treatment of infra-renal aortic aneurysmal disease.” *Id.* at

1:7–9. Hartley explains that “a prosthesis comprising two or more Z stents [are] sutured to a graft.” *Id.* at 2:22–23. Hartley further explains that a graft is compressed and placed “into a sheath which fits snugly.” *Id.* at 4:18–19. According to Hartley, a stent is expanded “to its full extent, holding it against the aortic wall with a radial force.” *Id.* at 6:3–4.

An embodiment of Hartley’s prosthesis is depicted in Figure 2, set forth below.

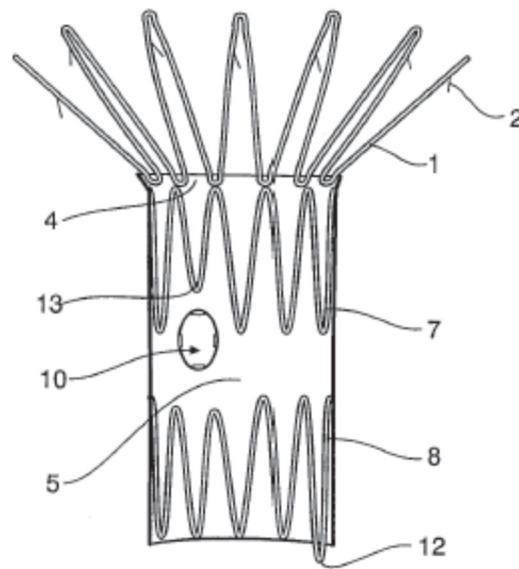


FIG 2

Figure 2 is an inside view “illustrating the internal Z stents and their relationship with the fenestrations for the intersecting arteries.” *Id.* at 5:16–18. As shown in Figure 2, two “stainless steel or nitinol Z stents 7 and 8 are fitted within the bio-compatible material tube 5” and “[f]enestrations 10 are provided in the bio-compatible material tube 5 [for] providing a[n] aperture in the tube which will in use align with the renal or other arteries.” *Id.* at 7:13–14, 17–19.

2. Discussion

Petitioner demonstrates persuasively how the combination of Hartley and Lazarus teach or suggest each limitation of the challenged claims. Pet. 64–86. According to Petitioner, a skilled artisan would have been motivated to combine the M-shaped configuration of Hartley’s stent arms with Lazarus’ telescoping longitudinal support structures for a number of reasons, including “to achieve maximal compression of a graft and to achieve the flexibility and adjustability disclosed in Lazarus.” *Id.* at 69 (citing Ex. 1003 ¶ 233). Petitioner contends that the skilled artisan would have had a reasonable expectation of success in combining these features of Hartley and Lazarus because both references disclose devices directed to the same technology, i.e., endovascular stent grafts for treating aneurysms, and having structures that can be used in stent-type supports for endovascular stent grafts. *Id.* at 70 (citing Ex. 1003 ¶¶ 229, 236–237). Thus, according to Petitioner, there would have been a reasonable expectation of success because the proposed combination of Hartley and Lazarus involves using one known element, i.e., Lazarus’ telescoping arms, in place of another known element, Hartley’s stent arms, to predictably provide a telescoping stent arms. *Id.* (citing Ex. 1003 236–237).

At this stage in the proceeding, we determine that Petitioner’s foregoing assertions are supported by the cited references and the currently unrebutted testimony of Dr. Chaikof. Based on the current record, we determine that Petitioner has shown sufficiently for institution that a person of ordinary skill in the art would have been motivated to modify Hartley’s stent to include the telescoping arms disclosed by Lazarus with a reasonable expectation of successfully providing an attachment device comprising each element recited in the challenged claims. In reaching these determinations,

we have considered Patent Owner's arguments. However, as explained in the following discussion, we do not find those arguments sufficiently supported at this stage in the proceeding to deny the Petition.

Patent Owner does not provide separate arguments for the each of the challenged claims. Instead, Patent Owner asserts the following arguments in reference to independent claim 1, and asserts that they similarly apply to claim 26. *See* Prelim. Resp. 63–74. To begin, Patent Owner argues that the combination of Hartley and Lazarus fails to disclose “arms that form the shape of a M,” or are in “an M configuration,” as required by the challenged claims 1 and 26, respectively. Prelim. Resp. 63–68. However, we find that argument insufficiently supported as it is based upon Patent Owner's proposed claim construction for the phrases “the shape of a M” and “an M configuration,” *see id.*, which we have not adopted for purposes of this decision.

Patent Owner argues also that “[a] POSA would not have combined the longitudinal support structures of Lazarus with the Z stents of Hartley for the same reasons a POSA would not have combined such support structures with the struts of Quiachon.” *Id.* at 69. Insofar as that argument is the same as what was raised for the combination of Quiachon and Lazarus, we find it unavailing, on the current record, for similar reasons discussed for the latter combination.

Additionally, Patent Owner asserts that Petitioner fails to provide a reason why a skilled artisan would have been motivated to combine Hartley with Lazarus when those references are directed to treating different aortic aneurysmal diseases in materially different manners. *Id.* at 69–70. Essentially, Patent Owner argues that Hartley deploys its stent graft above the renal arteries to treat infra-renal aortic aneurysmal disease, whereas,

Lazarus positions its stent graft system below the renal arteries to treat abdominal aortic aneurysms. *Id.* In particular, Patent Owner asserts that Hartley's graft body has fenestrations to account for its intended placement site, whereas, Lazarus's graft body does not have such fenestrations. *Id.* at 70. Petitioner's combination of Hartley and Lazarus, however, does not involve modifying the fenestrations within Hartley's graft body. Nor does the combination rely on the location where the stent is ultimately positioned during treatment. Rather, Petitioner's proposed modification merely combines one element from Lazarus, the telescoping arm, with Hartley's attachment system. Thus, we do not find that the identified differences between Hartley and Lazarus support Patent Owner's assertion that a skilled artisan would not have been motivated to combine their teachings in the manner proposed by Petitioner.

Based on the foregoing and our review and consideration of the current record, we determine that Petitioner has established a reasonable likelihood of successfully demonstrating that the challenged claims are rendered obvious over the combined teachings of Hartley and Lazarus. Accordingly, we determine that Petitioner has shown a reasonable likelihood of prevailing on its assertion that the challenged claims are rendered obvious by their combined teachings.

In view of our determination for the Quiachon and Lazarus grounds, we institute an *inter partes* review of all the challenged claims based upon all grounds raised in the Petition.

III. CONCLUSION

For the foregoing reasons, we conclude that Petitioner has established a reasonable likelihood of prevailing on its assertion that at least one claim of the '393 patent is unpatentable. In *SAS Institute Inc. v. Iancu*, the Supreme Court held that the Board's final written decision in an instituted *inter partes* review must address every claim challenged by a petitioner. 138 S. Ct. 1348, 1354 (2018). In light of *SAS*, the "the Board will either (1) institute as to all claims challenged in the petition and on all grounds in the petition, or (2) institute on no claims and deny institution." CTPG 64. We, accordingly, institute an *inter partes* review of all of the challenged claims on all asserted grounds.

Our determination in this Decision is not a final determination on either the patentability of any challenged claims or the construction of any claim term and, thus, leaves undecided any fact issues necessary to determine whether sufficient evidence supports Petitioner's contentions by a preponderance of the evidence in the final written decision. *See TriVascular, Inc. v. Samuels*, 812 F.3d 1056, 1068 (Fed. Cir. 2016) (noting that "there is a significant difference between a petitioner's burden to establish a 'reasonable likelihood of success' at institution, and actually proving invalidity by a preponderance of the evidence at trial" (quoting 35 U.S.C. § 314(a) and comparing *id.* § 316(e))).

IV. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 2, 4, 10, 11, and 26 of the '393 patent on all grounds set forth in the Petition is instituted, commencing on the entry date of this decision; and

FURTHER ORDERED that pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of review.

IPR2021-01532
Patent 7,101,393 B2

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