# United States Court of Appeals for the Federal Circuit

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**MEDTRONIC, INC., MEDTRONIC VASCULAR, INC.,**
*Appellants*

**v.**

**TELEFLEX INNOVATIONS S.A.R.L.,**
*Appellee*

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2021-2357, 2021-2360, 2021-2364

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Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2020-00127, IPR2020-00130, IPR2020-00136.

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Decided: June 5, 2023

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Before MOORE, *Chief Judge*, LOURIE and DYK, *Circuit Judges*.

MOORE, *Chief Judge*.

Medtronic, Inc. and Medtronic Vascular, Inc. (collectively, Medtronic) appeal *inter partes* review decisions of the Patent Trial and Appeal Board holding Medtronic failed to establish the unpatentability of various claims of U.S. Patent Nos. 8,048,032; RE45,380; and RE45,776 (the patents-in-suit). Medtronic also appeals the Board's decisions granting Teleflex Innovation S.à.r.l's (Teleflex) motions to amend certain claims of the '032 and '380 patents. For the following reasons, we affirm.

## BACKGROUND

Coronary artery disease, in which plaque buildup narrows the lumen (i.e., the tubular cavity) of a patient's artery and obstructs blood flow, affects millions of Americans. Cardiologists refer to this narrowing of a patient's artery as stenosis. *See* '032 patent at 1:25–26.[1] For decades, cardiologists have used devices known as guide catheters to deliver interventional cardiology devices (e.g., guidewires, stents, balloon catheters) designed to alleviate stenoses. *Id.* at 1:15–29. Treatment typically involves inserting the guide catheter into the patient's femoral or radial artery and guiding the catheter to the patient's aorta until the distal tip of the catheter reaches the ostium (i.e., opening) of the coronary artery. *Id.* at 1:30–36. Interventional devices can then be inserted into the proximal opening of the

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[1] The patents-in-suit share a common specification. For simplicity, all citations to the written description will refer to the '032 patent.

catheter, advanced through the lumen of the catheter using a guidewire, and delivered past the stenosis.[2] *Id.*

These procedures involved certain challenges and risks. For example, "[c]rossing tough lesions can create enough backward force to dislodge the guide catheter from the ostium of the artery being treated," disrupting the procedure and potentially harming the patient. *Id.* at 1:36–40, 4:40–46. This problem drove practitioners to seek new catheter designs and methods with increased "back-up support" that would prevent backward dislodgment of the catheter. *Id.* at 1:36–44. For example, one method disclosed in a prior art journal article (Takahashi) involves a "mother-and-child" technique in which a standard 5 French guide catheter is inserted into a 6 French guide catheter and advanced until its distal tip is deep within the patient's ostium, a technique known as deep seating.[3] *Id.* at 2:17–29; *see* J.A. 2172–76 (Takahashi). However, deep seating using standard guide catheters in the mother-and-child technique also involved risks, including that the stiff distal end of the inner catheter could damage the coronary artery when deeply embedded. '032 patent at 2:28–44.

The patents-in-suit, owned by Teleflex, sought to address these problems by using a coaxial extension catheter insertable into standard guide catheters that offered increased back-up support and the ability to deep seat without the attendant drawbacks of traditional mother-and-child systems. *See id.* at 2:53–3:4, 4:33–5:3. In a preferred embodiment, the disclosed extension catheter includes three parts: (1) a proximal substantially rigid portion 20

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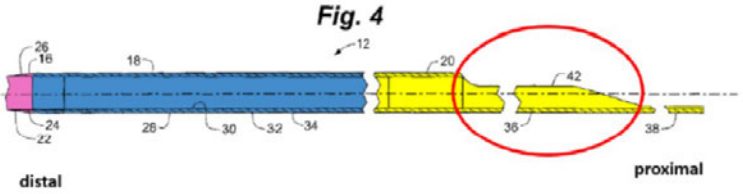
[2] The proximal and distal ends of a catheter respectively refer to the ends nearest to and farthest from the treating physician.

[3] One French is the standard unit of measurement for catheter diameters. One French equals one third of a millimeter. *See* J.A. 1886 ¶ 46.

(yellow); (2) a reinforced portion 18 (blue); and (3) a distal flexible tip 16 (pink). *See id.* at 6:9–54; *see also id.* at Fig. 4 (reproduced below as annotated by Medtronic's expert). The proximal end of the guide extension catheter includes a "side opening," i.e., a partially cylindrical region (red circle), which permits the extension catheter to receive and deliver interventional cardiological devices while it is within the guide catheter. *Id.* at 9:44–63. As depicted in Figure 4, the side opening may include multiple inclined regions separated by a non-inclined region, a structure referred to herein as a double-inclined side opening. The patents-in-suit also disclose and claim embodiments in which the diameter of the extension catheter is no more than one French smaller than the diameter of the guide catheter, thereby preserving maximal volume within the coaxial lumen for receiving interventional devices. *See id.* at 3:5–20.




In 2009, Teleflex introduced a series of guide extension catheters embodying claims of the patents-in-suit and marketed as the GuideLiner V1, GuideLiner V2, and GuideLiner V3 (collectively, the GuideLiner). Those products enjoyed undisputed commercial success and industry praise and were eventually followed by multiple, competing guide extension catheters, including Medtronic's Telescope product, introduced in 2019.

## PROCEDURAL HISTORY

In November of 2019, Medtronic petitioned for *inter partes* review of the patents-in-suit, alleging the challenged claims would have been obvious over U.S. Patent No. 5,439,445 (Kontos), which discloses a support catheter for

delivering angioplasty balloons, in view of various combinations of secondary references. The secondary references included: (1) U.S. Patent Application Publication No. 2004/0010280 (Adams), disclosing a catheter assembly with a distal side opening for removing embolic debris while occluding blood flow during treatment; (2) U.S. Patent No. 7,604,612 (Ressemann), disclosing an evacuation sheath assembly with a distal side opening used to remove embolic material while occluding blood flow using sealing balloons; (3) U.S. Patent Application Publication No. 2005/0015073 (Kataishi), disclosing a suction catheter designed to remove thrombi in blood vessels; and (4) Takahashi.

The Board instituted each petition and issued final written decisions holding some claims unpatentable and others not. *See Medtronic, Inc. v. Teleflex Innovations S.à.r.l.*, No. IPR2020-00127, 2021 WL 2518685 (P.T.A.B. June 7, 2021) (*'032 Decision*); *Medtronic, Inc. v. Teleflex Innovations S.à.r.l.*, No. IPR2020-00130, 2021 WL 2524006 (P.T.A.B. June 17, 2021) (*'380 Decision*); *Medtronic, Inc. v. Teleflex Innovations S.à.r.l.*, No. IPR2020-00136, 2021 WL 2524191 (P.T.A.B. June 17, 2021) (*'776 Decision*). In addition, the Board granted Teleflex's contingent motions to amend certain claims of the '032 and '380 patents and determined the amended claims were not unpatentable.

The parties organize the claims determined not unpatentable into four (overlapping) sets, a categorization we adopt for our analysis. The Side Opening Claims are claims 3, 4, 9, 13, and 18 of the '032 patent; claims 3, 4, 9, 14, and 19 of the '380 patent; and claims 25–27, 29, 33, 35–37, 39, 41–49, and 52 of the '776 patent. The One-French Claims are claims 8 and 17 of the '032 patent; claims 8 and 18 of the '380 patent; and claims 30–32 and 53–56 of the '776 patent. The Double-Incline Claims are claims 52–56 of the '776 patent. Lastly, the Substitute Claims are claims

23–25 of the '032 patent and claims 43 and 44 of the '380 patent.[4]

## DISCUSSION

Medtronic appeals the Board's determination that Medtronic failed to prove the Side Opening, One-French, and Double-Incline Claims would have been obvious. It also challenges the Board's decision granting Teleflex's motion to introduce substitute claims. We address each issue in turn.

### I

We first address Medtronic's arguments that the Board erred in determining the Side Opening, Double-Incline, and One-French Claims are not unpatentable as obvious.[5] Obviousness is a question of law based on underlying facts. *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1326 (Fed. Cir. 2016). We review the Board's ultimate determination of

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[4] Though delineated separately, the One-French and Double-Incline Claims of the '776 patent, as well as the Substitute Claims, also recite a side opening.

[5] Teleflex contends Medtronic forfeited various arguments by failing to raise them in its Requests for Director Rehearing made pursuant to 37 C.F.R. § 42.71(d), which requires the petitioning party to "specifically identify all matters the party believes the Board misapprehended or overlooked." Specifically, Teleflex argues Medtronic's alleged failure to comply with § 42.71(d), while not a jurisdictional bar to our review, grants us discretion to find unraised issues forfeited. We need not resolve this question. Even if Medtronic forfeited these arguments, an issue we do not decide, we have the discretion to reach them on appeal. *Ciena Corp. v. Oyster Optics, LLC*, 958 F.3d 1157, 1161 (Fed. Cir. 2020) ("[I]t is a discretionary decision to forgive waivers of non-jurisdictional challenges . . . .").

obviousness de novo and its underlying findings of fact for substantial evidence. *Id.*

A. SIDE OPENING CLAIMS

Claim 3 of the '032 patent is representative of the Side Opening Claims. It recites:

> 3. The device of claim 2 wherein the proximal portion of the tubular structure further comprises structure defining a *proximal side opening* extending for a distance along the longitudinal axis, and accessible from a longitudinal side defined transverse to the longitudinal axis, to receive an interventional cardiology device into the coaxial lumen while the proximal portion remains within the lumen of the guide catheter.

'032 patent at claim 3 (emphasis added).

As relevant here, Medtronic's petitions asserted two obviousness grounds against the Side Opening Claims: (1) Kontos in view of Adams, asserted against the claims of the '032 and '380 patents, and (2) Kontos in view of Ressemann, asserted against the claims of the '776 patent. *See '032 Decision*, at *4; *'380 Decision*, at *3; *'776 Decision*, at *3. Each ground relied on modifying Kontos' extension catheter by removing a funnel portion at the proximal end of the catheter and replacing it with the distal side openings disclosed in either Adams or Ressemann. Medtronic contended a skilled artisan would be motivated to make its proposed modifications for four separate reasons related to alleged improvements in the ease and scope of use of Kontos' modified device.

In response, Teleflex argued Medtronic's proposed modifications were unsupported by evidence, based on hindsight, and/or would not achieve the benefits Medtronic alleged without additional modifications not disclosed in Medtronic's petition. In addition, Teleflex introduced

evidence of objective indicia of nonobviousness tied to its GuideLiner products, which are undisputedly embodiments of the Side Opening Claims. This included evidence that the GuideLiner was commercially successful, solved long-felt but unsolved needs, garnered industry praise, and was copied by competitors, including Medtronic.

Medtronic's reply acknowledged additional modifications were necessary to achieve some of the alleged benefits but argued these modifications would not have deterred a skilled artisan because each was within the level of ordinary skill. It also disputed Teleflex's evidence of objective indicia, arguing the evidence lacked a nexus with the Side Opening Claims and denying it had copied the GuideLiner in developing the Telescope.

In its final written decisions, the Board held Medtronic failed to establish the Side Opening Claims would have been obvious. *See '032 Decision*, at *21; *'380 Decision*, at *21; *'776 Decision*, at *16. The Board first determined the parties' arguments regarding the references' disclosures and motivations to combine presented a "close case." *'032 Decision*, at *20; *'380 Decision*, at *14; *'776 Decision*, at *9. To resolve that close *prima facie* case, the Board then turned to Teleflex's objective evidence, which it found had a nexus with the Side Opening Claims. Weighing these competing considerations, the Board ultimately determined Teleflex's "strong objective evidence of nonobviousness" overcame the close *prima facie* case and that Medtronic had failed to prove the Side Opening Claims unpatentable. *'032 Decision*, at *21; *'380 Decision*, at *21; *'776 Decision*, at *16.

On appeal, Medtronic contends the Board committed a host of legal errors in its analysis of Teleflex's objective evidence and the parties' *prima facie* arguments. For the reasons given below, we conclude that the Board did not err in its analysis and that its findings are supported by substantial evidence. We therefore affirm the Board's

determination that Medtronic failed to establish the Side Opening Claims would have been obvious.

1. NEXUS

Medtronic first argues the Board committed legal error when it found a nexus between Teleflex's objective evidence and the Side Opening Claims. Specifically, it contends the Board erred by finding nexus based on "three specific features [of the GuideLiner]—(1) rapid exchange functionality, i.e., having a relatively short lumen at the distal end of the catheter; (2) increased back-up support; and (3) a side opening"—that were collectively disclosed in a single prior art reference, namely Ressemann, and therefore are not indicative of nonobviousness. Appellant's Opening Br. at 68. We do not agree.

As an initial matter, it is undisputed that a presumption of nexus applies in this case because Teleflex's "asserted objective evidence is tied to a specific product [i.e., the GuideLiner] and that product is the invention disclosed and claimed" by the patents-in-suit. *See, e.g.*, *'032 Decision*, at *19 (internal quotation marks omitted) (quoting *WBIP*, 829 F.3d at 1329). As the Board explained, Medtronic could rebut this presumption by showing Teleflex's objective evidence resulted from features that were known, as a combination, in the prior art rather than the claimed invention as a whole. *Id.* The Board did not err in finding Medtronic failed to make such a showing here.

The Board acknowledged Medtronic showed every element of the Side Opening Claims was *individually* known in the prior art but correctly concluded this did not preclude nexus where the evidence was "tied to the combination of features as a whole" and the combination was not previously known. *Id.* (citing *WBIP*, 829 F.3d at 1331–32). Citing testimony from three of Teleflex's experts, the Board found "it was the GuideLiner devices *as a whole* that resulted in the evidence of secondary considerations, not any individual feature in isolation." *Id.* (emphasis added); *see*

*'380 Decision*, at *20; *'776 Decision*, at *15. The Board credited this testimony as showing that "[w]hen the various features of the prior art *were combined* to form the GuideLiner device . . . the result was a new, market-making, commercially successful product that provided significant benefits over prior art devices, received praise in the art, and was copied by competitors." *'032 Decision*, at *19 (emphasis added). The Board thus explicitly grounded its nexus finding on a *combination* of GuideLiner features it found were not disclosed, at least as a combination, in the prior art. We detect no legal error in this analysis.

Medtronic accuses the Board of legal error because, in its view, Ressemann discloses the combination of features upon which Teleflex and the Board relied in its nexus analysis. While styled as a dispute of law, Medtronic's argument is merely disagreement with the Board's fact findings. *See, e.g.*, *Med. Instrumentation & Diagnostics Corp. v. Elekta AB*, 344 F.3d 1205, 1221 (Fed. Cir. 2003) ("The question of what a reference teaches and whether it describes every element of a claim is a question for the finder of fact."); *WBIP*, 829 F.3d at 1331 ("Questions of nexus are highly fact-dependent . . . ."). Medtronic asserts Teleflex attributed the GuideLiner's success to its combination of rapid exchange functionality, increased back-up support, and "a side opening." This is a mischaracterization. Teleflex and its experts did not attribute the GuideLiner's success to a side opening in combination with the improved functionalities. Rather, Teleflex argued the GuideLiner was successful because, in addition to offering increased back-up support and rapid exchange functionality, it could advantageously "receive the full array of interventional cardiology devices," an ability it grounded in "the claimed requirement that the tubular structure have a 'coaxial lumen' (which facilitates maximizing 'real estate') . . . *combined with* a side opening that facilitates entry of . . . [an] interventional cardiology device into the tubular portion." J.A. 17611 (emphasis added); *see also* J.A. 23676–67

(explaining the ability to receive the full array of cardiological devices is "reflected in the claimed requirement for a single lumen, *as well as* [a side opening]" (emphasis added)).

Teleflex, and the Board, thus clearly relied not just on the presence of a side opening, as Medtronic contends, but on a side opening *together with* coaxial lumens. Indeed, Teleflex's expert Dr. Graham clearly explained that *both* the coaxial lumen and proximal side opening are critical to the GuideLiner's ability to receive the full array of interventional cardiology devices. The proximal side opening allows the GuideLiner to "receive interventional cardiology devices . . . while the proximal opening was deep inside the guide catheter," and the coaxial lumen "allow[s] the usable real estate inside the guide extension catheter to be maximized." J.A. 10302 ¶ 81. Thus, even if Medtronic's allegation that Ressemann discloses a device with a side opening, rapid exchange functionality, and increased back-up support were true, it does not show the features driving the GuideLiner's success were disclosed in the prior art.

Medtronic contends the Board's reliance on the coaxial lumens touted by Teleflex's experts is irrelevant because "the Board never made any finding distinguishing the claimed side opening from Ressemann." Appellant's Reply Br. at 27. Medtronic misunderstands the applicable burdens. In an *inter partes* review, "the petitioner shall have the burden of proving a proposition of unpatentability by a preponderance of the evidence." 35 U.S.C. § 316(e). The *absence* of a finding that Ressemann does not have a coaxial lumen therefore cannot establish Ressemann in fact has those features.[6] Medtronic also points to the Board's

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[6] Medtronic's assertion that the Board did not make any findings distinguishing the claimed side opening from Ressemann is also incorrect. In discussing Teleflex's evidence of copying, the Board rejected Medtronic's argument

finding in a related proceeding that Ressemann anticipates claims 25, 26, 28–31, 34–37, and 39 of the '380 patent. *See Medtronic, Inc. v. Teleflex Innovations S.à.r.l.*, No. IPR2020-00129, 2021 WL 2524890, at *11 (P.T.A.B. June 17, 2021). However, as the Board noted in that decision, those claims do not recite coaxial lumens. *Id.* at *7 n.9. The Board's finding that Ressemann anticipates those claims therefore implies nothing about whether Ressemann discloses the coaxial lumens recited by the Side Opening Claims.

We conclude the Board did not err in finding a nexus between Teleflex's objective evidence and the Side Opening Claims. Medtronic does not otherwise argue that the Board's finding, if legally proper, is not supported by substantial evidence. Accordingly, we affirm the Board's finding of nexus.

2. COPYING

Medtronic next challenges the Board's finding that Medtronic copied the GuideLiner in developing its own guide extension catheter, the Telescope. *See '032 Decision*, at *20; *'380 Decision*, at *21; *'776 Decision*, at *16. The Board found Medtronic copied the GuideLiner based on its findings that (1) Medtronic had access to the GuideLiner

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that Teleflex could not show copying of the GuideLiner, as opposed to the prior art, because Ressemann is also "a rapid exchange device and has a side opening." *'032 Decision*, at *21. The Board found this argument unavailing because the copying product "did not merely apply the idea of rapid exchange or the use of a side opening," as taught by Ressemann, but instead "reproduce[d] the entire combination of features that were assembled for the first time by the GuideLiner products." *Id.* The Board thus rejected any contention that Ressemann disclosed the full combination of features utilized by the GuideLiner.

while it was developing the Telescope and the products have substantially similar designs, and (2) there was "direct evidence" Teleflex had copied "at least a portion of the GuideLiner device." *See, e.g.*, *'032 Decision*, at *20. Medtronic argues the Board's reliance on substantial similarity between the GuideLiner and Telescope products to infer copying evinces legal error. In Medtronic's view, evidence of substantial similarity is "irrelevant" because it does not show that Medtronic "actually copied" the GuideLiner when developing the Telescope. Appellant's Opening Br. at 64. Under a correct view of the law, Medtronic argues, the Board "identified no evidence of actual copying efforts" and therefore its finding of copying must be reversed. *Id.*

"It is well established that copying by a competitor is a relevant consideration in the objective indicia analysis" and therefore "may be evidence that the patented invention is nonobvious." *Liqwd, Inc. v. L'Oreal USA, Inc.*, 941 F.3d 1133, 1137 (Fed. Cir. 2019). The fact that a competitor copied the patentee's invention, rather than one within the public domain, is probative of nonobviousness because it suggests the competitor saw value in the invention that he could not achieve without copying. *See, e.g.*, *Diamond Rubber Co. of N.Y. v. Consol. Rubber Tire Co.*, 220 U.S. 428, 441 (1911). "Copying may indeed be another form of flattering praise for inventive features" of a patented product, *Crocs, Inc. v. Int'l Trade Comm'n*, 598 F.3d 1294, 1311 (Fed. Cir. 2010), but one undertaken at the risk of infringement.

These rationales only apply, of course, if the alleged copyist has in fact copied the patented product rather than independently arrived at a similar design. Indeed, a competitor's independent and contemporaneous development of a similar product may, in some cases, even suggest the patented product *would* have been obvious. *Lindemann Maschinenfabrik GMBH v. Am. Hoist & Derrick Co.*, 730 F.2d 1452, 1460 (Fed. Cir. 1984) ("[T]he possibility of near simultaneous invention by two or more equally talented inventors working independently . . . may or may not be an

indication of obviousness when considered in light of all the circumstances."). It is also clear that the copying inquiry involves a comparison of the competitor's product with the allegedly copied patented product, rather than the patent's claims, lest the "separate infringement and copying inquiries [collapse] into a single analysis." *Liqwd,* 941 F.3d at 1137; *see also Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004) ("[C]opying requires the replication of a specific product."). To that end, we have recognized copying must be supported by "actual evidence of copying efforts as opposed to mere allegations regarding similarities between the accused product and a patent." *Liqwd*, 941 F.3d at 1337–38.

We have never held, however, that copying cannot be established through evidence of access to and substantial similarity with a patented *product*. Indeed, in *Liqwd*, the very case Medtronic cites for the proposition that substantial similarity is irrelevant, we expressly recognized that "[e]vidence of copying may include . . . access and similarity to a patented product." *Id.* at 1337; *see also Cable Elec. Prods., Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1027 (Fed. Cir. 1985) ("Access in combination with similarity can create a strong inference of copying."), *overruled on other grounds by Midwest Indus., Inc. v. Karavan Trailers, Inc.*, 175 F.3d 1356 (Fed. Cir. 1999). That same standard is also universally applied in the copyright context, which likewise requires actual copying of a copyrighted work rather than similarity by happenstance. *See, e.g.*, *Walker v. Time Life Films, Inc.*, 784 F.2d 44, 48 (2d Cir. 1986) ("Copying may be inferred where a plaintiff establishes that the defendant had access to the copyrighted work and that substantial similarities exist as to protectible material in the two works.").

Medtronic's contention that the Board identified no evidence of actual copying is at odds with this precedent. Evidence of access and substantial similarity *is* evidence of copying. Medtronic's argument is tantamount to requiring

that copying can be proven only by direct evidence "such as photos of patented features or disassembly of products," *Liqwd*, 941 F.3d at 1137, rather than circumstantial evidence such as access and similarity. Our case law has never drawn any such distinction, nor would such a distinction be consistent with basic principles of evidence and inference. Circumstantial evidence is just that—evidence. It establishes that a given fact is more likely to be true than one would otherwise believe in the absence of the evidence. Nor is circumstantial evidence second-class to direct evidence: "Circumstantial evidence is not only sufficient, but may also be more certain, satisfying and persuasive than direct evidence." *Michalic v. Cleveland Tankers, Inc.*, 364 U.S. 325, 330 (1960) (citation omitted).

Here, there is more than sufficient circumstantial evidence to support the Board's finding of copying.[7] *See WBIP*, 829 F.3d at 1336 ("Copying is a question of fact" reviewed for substantial evidence). Teleflex's experts "persuasively demonstrate[d] that the . . . Telescope products, when considered as a whole, are substantially similar in design to then-existing GuideLiner products on the market, including the combined use of a flexible tip, reinforced portion, angled opening, pushrod, and rounded push tab." *'032 Decision*, at *20 (citing J.A. 10052–57 ¶¶ 231–39). Medtronic contends the Board disregarded differences between the GuideLiner and Telescope in finding substantial similarity. Not so. The Board acknowledged the Telescope "differs from the GuideLiner V3 in its use of a hydrophilic coating and a round pushwire, and the 'half pipe' design of the two products is not identical." *Id.* It simply found, again crediting Teleflex's expert, that these differences

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[7] It is undisputed that the GuideLiner was publicly available on the market and accessible to Medtronic while it was developing the Telescope.

were not so significant as to preclude substantial similarity and the corresponding inference that Medtronic copied. *Id.*

Medtronic's argument that the Board committed legal error by relying on evidence of substantial similarity is meritless.[8] Because the Board's finding that Medtronic copied is supported by substantial evidence, we affirm its finding that Medtronic's copying is indicative of nonobviousness.

### 3. ADDITIONAL OBJECTIVE INDICIA

In addition to Medtronic's copying, the Board relied on multiple other objective indicia of nonobviousness, including evidence the GuideLiner was copied by other competitors, enjoyed "a high level of commercial success," "received significant praise in the industry," and solved long-felt needs within the medical community for catheters with increased back-up support.[9] *See, e.g.*, *'032 Decision*, at *16–20. Medtronic does not challenge any of these findings on appeal. Thus, having affirmed the Board's findings of nexus and Medtronic's copying, the Board's findings related to objective indicia remain entirely intact.

The Board's findings related to Teleflex's objective evidence played a critical role in its determination that the Side Opening Claims are not unpatentable. The Board expressly turned to that "strong evidence" in order to resolve

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[8] Medtronic also disputes the Board's finding of "direct evidence" of copying on the same grounds that it disputes the Board's finding of substantial similarity: that the evidence is insufficient to show actual copying. *See, e.g.*, *'032 Decision*, at *20. We reject those arguments for the same reasons.

[9] The Board also considered Teleflex's evidence that competitors licensed the patents-in-suit but found this evidence to have limited probative value. *'032 Decision*, at *17. We therefore do not consider this evidence on appeal.

the parties' close *prima facie* arguments and, on that basis, found Medtronic had failed to establish the obviousness of the Side Opening Claims. *E.g.*, *'032 Decision*, at *21. While we review the ultimate question of obviousness de novo, the Board's finding that the objective evidence carried significant weight is entitled to deference. *In re Inland Steel Co.*, 265 F.3d 1354, 1366 (Fed. Cir. 2001) ("[W]e give the Board broad deference in its weighing of the [objective] evidence before it."); *see also Bristol-Myers Squibb Co. v. Teva Pharms. USA, Inc.*, 752 F.3d 967, 978 (Fed. Cir. 2014) ("We give deference to a lower court's factual findings regarding evidence of secondary considerations.").

"Weighing this objective evidence along with all the other evidence relevant to obviousness," we agree with the Board's determination that Medtronic failed to prove the Side Opening Claims obvious by a preponderance of the evidence. *See Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340, 1355 (Fed. Cir. 2012) (concluding claims were nonobvious despite *prima facie* showing of obviousness). Even accepting Medtronic's arguments concerning the prior art's disclosures and motivations to combine, the unusually strong objective evidence in this case strongly supports a determination of nonobviousness. *See Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538–39 (Fed. Cir. 1983) ("[E]vidence of secondary considerations may often be the most probative and cogent evidence in the record. It may often establish that an invention appearing to have been obvious in light of the prior art was not.").

The Board found four distinct objective factors support nonobviousness, the majority of which Medtronic did not even attempt to dispute below or on appeal. These include the Board's finding that the GuideLiner enjoyed a "high level of commercial success" and that Teleflex's licensees "had essentially 100% of the U.S. guide extension catheter market." *'032 Decision*, at *16 (citing J.A. 10533–40 (confidential documents demonstrating the GuideLiner's

commercial success)). Indeed, Medtronic's own internal documents concede the GuideLiner "created the market" for guide extension catheters and enjoyed substantial market share. J.A. 10858. The GuideLiner's considerable commercial success clearly supports a determination of nonobviousness. *Demaco Corp. v. F. Von Langsdorff Licensing Ltd.*, 851 F.2d 1387, 1391 (Fed. Cir. 1988) ("The commercial response to an invention is significant to determinations of obviousness, and is entitled to fair weight."). The Board also relied on extensive praise within the industry, which touted the GuideLiner as "an elegant method to overcome" problems the industry previously considered "impossible despite the use of a highly supporting guiding catheter." *'032 Decision*, at *17 (citing J.A. 10588–843); *see also '380 Decision*, at *16 (discussing evidence the GuideLiner solved the long-felt but unmet need for a catheter that could avoid backout problems and "allow[ed] physicians to perform previously impossible coronary procedures"). That the GuideLiner solved problems the industry previously considered "impossible" is also strongly suggestive of nonobviousness. *WBIP*, 829 F.3d 1335 ("If industry participants or skilled artisans are skeptical about whether or how a problem could be solved . . . it favors nonobviousness."). Teleflex's experts similarly testified the GuideLiner was "a transformational and enabling device" that provided an "elegant" and "completely new" solution to problems the industry had attempted to solve for decades without success. *See* J.A. 10292 ¶¶ 69, 70 (Dr. Graham); J.A. 11158–64 ¶¶ 7, 9–20 (Dr. Thompson); J.A. 10487–92 ¶¶ 4–10, 12 (Dr. Azzalini).

Additionally, like the Board, we find particularly persuasive the Board's finding that multiple competitors copied the GuideLiner in developing their own guide extension catheters. *WBIP*, 829 F.3d at 1336 ("The fact that a competitor copied technology suggests it would not have been obvious."). This finding was based not only on Teleflex's expert testimony that the GuideLiner and competing

products were substantially similar, but also direct evidence showing competitors actively sought to emulate the GuideLiner. For example, Medtronic's design documents demonstrate Medtronic purchased and tested the GuideLiner while developing the Telescope, J.A. 10899–90, and concede it was seeking to "build its own 'Half Pipe' design," J.A. 10848, "Half Pipe" being a marketing term used by Teleflex to describe the GuideLiner's side opening, J.A. 10565. *See also* J.A. 11317–33 (confidential documents comparing the GuideLiner and Telescope). Other documents and testimony show other competitors likewise sought to reproduce the claimed beneficial features of the GuideLiner. *See, e.g.*, J.A. 10887 (Boston Scientific characterizing its GuideZilla product as "incorporate[ing] substantially equivalent device materials and design . . . [and] fundamental technology . . . as the GuideLiner V2"); J.A. 10052 ¶¶ 232–39 (Teleflex expert opining the GuideZilla and GuideLiner are substantially similar).

The Board's findings support the conclusion that Medtronic failed to carry its burden to show obviousness. We see no legal error in the Board's conclusion that Medtronic failed to prove the Side Opening Claims would have been obvious by a preponderance of the evidence. While we have acknowledged "[a] strong case of prima facie obviousness . . . cannot be overcome by a far weaker showing of objective indicia of nonobviousness," *Tokai Corp. v. Easton Enters., Inc.*, 632 F.3d 1358, 1371 (Fed. Cir. 2011), this case presents the opposite scenario. The Board found Medtronic presented a "close" *prima facie* case, but that this showing was overcome by Teleflex's "strong" objective evidence. We agree.

### 4. THE BOARD'S PRIMA FACIE ANALYSIS

Medtronic's remaining arguments regarding the Side Opening Claims take issue with the Board's exemplary reasons for finding the parties' *prima facie* arguments

presented a close case. Medtronic argues these reasons reflect legal errors in the Board's analysis. We are not persuaded.

Medtronic first contends the Board erred by allegedly ignoring two of Medtronic's proposed motivations to combine. Medtronic's petition contended a skilled artisan would be motivated to make its proposed modifications for four reasons, namely to (1) allow the outer diameter of Kontos' assembly to be reduced without reducing entry area; (2) facilitate smoother insertion of interventional cardiology devices into the extension catheter; (3) reduce the force necessary to advance the extension catheter through the guide catheter while in tortuous vasculature; and (4) permit smoother reentry of the proximal end of the extension catheter into the guide catheter if it was extended beyond the distal tip of the guide catheter. Medtronic asserts the Board legally erred by failing to consider the latter two reasons in its decisions.

Contrary to Medtronic's arguments, the Board's decisions do not suggest the Board ignored any proposed motivations to combine. The Board expressly and accurately recounted each of Medtronic's proposed motivations and Teleflex's responses before concluding that "upon review of the . . . arguments and supporting evidence," the parties had presented a close case. *'032 Decision*, at *20; *'380 Decision*, at *14; *'776 Decision*, at *9. The Board's express statement that it "review[ed]" and weighed the arguments it had just recounted belies Medtronic's contention that those arguments were simply ignored.

Medtronic infers the Board ignored these motivations because they do not appear in the Board's exemplary reasons for finding the parties' arguments presented a close *prima facie* case. *See '032 Decision*, at *20 (providing "example[s]" of deficiencies in Medtronic's arguments); *'380 Decision*, at *14 (same); *'776 Decision*, at *9 (same). Medtronic's inference is not warranted. That the Board did not

explicitly address some of Medtronic's proposed motivations in its *exemplary* reasons does not imply the Board ignored those motivations, especially where, as here, the Board had just enumerated the arguments. Nothing in the Board's decisions suggests its examples were intended as an exhaustive list of arguments the Board considered or rejected. Indeed, if any inference is to be drawn from the absence of the allegedly ignored motivations in the Board's exemplary criticisms, it is that the Board considered those motivations and found them more persuasive than those it explicitly decried—precisely the opposite of what Medtronic suggests.

Medtronic also suggests that, even if the Board in fact considered each motivation in reaching its determination, its failure to explicitly address every motivation in its written decisions is inconsistent with its obligations under the Administrative Procedure Act. We do not agree. While we have acknowledged "it is not adequate [for the Board] to summarize and reject arguments without explaining why [it] accepts the prevailing argument," *In re Nuvasive, Inc.*, 842 F.3d 1376, 1383 (Fed. Cir. 2016), we have also repeatedly explained "the Board is not require[d] . . . to address every argument raised by a party or explain every possible reason supporting its conclusion," *Yeda Rsch. v. Mylan Pharms. Inc.*, 906 F.3d 1031, 1046 (Fed. Cir. 2018). The central inquiry is whether we can "reasonably discern that [the Board] followed a proper path, even if that path is less than perfectly clear." *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015) (citing *Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 285–86 (1974)).

The Board's path in this case is discernible. The Board accurately recounted the parties' *prima facie* arguments and evidence and noted those arguments made for a close case, suggesting it considered and weighed all of the arguments it had just recounted. The Board then went on to expressly identify the prevailing argument driving its

decision, namely the strong objective evidence of nonobviousness, which it turned to "in order to resolve this close case of obviousness." *'032 Decision*, at *20; *see also '380 Decision*, at *14; *'776 Decision*, at *10. While the Board's decision could have been more detailed, "we do not require perfect explanations." *In re Nuvasive*, 842 F.3d at 1382. Certainly, nothing suggests the Board "entirely failed to consider an important aspect of the problem" before it. *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). Accordingly, we conclude the Board adequately explained the grounds for its decisions. *See SEC v. Chenery Corp.*, 318 U.S. 80, 94 (1932) ("[T]he orderly functioning of the process of review requires that the grounds upon which the administrative agency acted [are] clearly disclosed and adequately sustained.").

Medtronic also argues the Board erred in its analysis of the motivations. In each decision, the Board noted that replacing Kontos' funnel to reduce the diameter of the catheter and increase the interior volume would require several additional modifications absent from Medtronic's petition, including at least one modification that the Board found "may not have been possible in the relevant time period." *'032 Decision*, at *20; *'380 Decision*, at *14; *'776 Decision*, at *9.[10] Although the Board did not indicate it gave these observations particular weight in its analysis or that they led it to ultimately find a skilled artisan would not have had a reasonable expectation of success, Medtronic contends the Board erred in "doubting" that success. Appellant's Opening Br. at 40–45. Specifically, Medtronic argues the Board's supposed finding that a skilled artisan would not have had a reasonable expectation of success is not

[10] The Board's observation that one modification may have been impossible was not included in the *'776 Decision*, although Medtronic relied on the same modification in that proceeding.

supported by substantial evidence because each modification would have been routine and within the level of ordinary skill.

The Board's "doubts" regarding Medtronic's proposed modifications do not indicate the Board found a skilled artisan would not have had a reasonable expectation of success. Indeed, had the Board made such a finding, there would have been no need for it to rely on Teleflex's objective evidence to resolve the case because the absence of a reasonable expectation of success defeats obviousness. *Regents of Univ. of Cal. v. Broad Inst., Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018) ("An obviousness determination *requires* finding that a person of ordinary skill in the art would have been motivated to combine or modify the . . . prior art and would have had a reasonable expectation of success in doing so." (emphasis added and citation omitted)). We understand the Board's decision as concluding that, *even if* a skilled artisan would have been motivated to make and reasonably expected success in making the proposed modifications, Medtronic had not established obviousness in view of Teleflex's strong objective evidence.[11] Medtronic's assertion that the Board's doubts demonstrate legal error or constitute unsupported findings is thus unpersuasive.

Next, Medtronic argues the Board erred as a matter of law by discounting prior art side openings intended to receive interventional cardiological devices as rare. *See, e.g.*, *'032 Decision*, at *20 (noting in its exemplary criticisms that side openings used to receive interventional devices while the catheter was still in vasculature were "rare" in the prior art). We do not agree. In the circumstances of

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[11] To the extent the Board did make such a finding, it is supported by substantial evidence for the same reasons discussed below with respect to the One-French Claims. *See infra* Section I.B.

this case, the Board, as the trier of fact, could consider a feature's rarity in finding whether there was a motivation to combine the prior art, itself a factual inquiry.[12] *See, e.g.*, *WBIP*, 829 F.3d at 1327.

Medtronic contends our decision in *Cree* precludes the Board from "dismiss[ing]" prior art disclosures because of their rarity. Appellant's Opening Br. at 36–37 (citing *In re Cree, Inc.*, 818 F.3d 694, 700–01 (Fed. Cir. 2016)). As an initial matter, the Board's decisions do not suggest they "dismissed" the prior art disclosures. Rather, those decisions prove the Board considered the disclosures but found, as a factual matter, that their relative rarity weighed against a motivation to combine. *See, e.g.*, *'032 Decision*, at *20. In any event, the Board's analysis is consistent with *Cree*. There, Cree argued the Board erred by relying on expert testimony to support a finding that a process was known in the prior art because the experts had also testified the process was disfavored. 818 F.3d at 700. We rejected that argument because the testimony plainly cut against Cree's contention that the process was "unknown" and instead supported the Board's finding that the process was known, even if disfavored. *Id.* This case presents the inverse scenario, but the Board's reliance on Teleflex's expert testimony was no less proper. Medtronic's petition contended that side openings were "well known" in the prior art and identified several purported examples. J.A. 17064. Teleflex responded with expert testimony explaining why Medtronic's cited examples did not in fact use side openings in the manner claimed and opining such side

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[12] Medtronic did not raise any argument, below or on appeal, that rarity was not probative *because* it was due to factors unrelated to potential motivations to combine. Instead, it argued only that the rarity of a feature is categorically irrelevant to whether a skilled artisan would have been motivated to incorporate it into a new design.

openings were "not well-known." The Board did not err in taking this testimony into account when assessing the strength of Medtronic's evidence. Testimony that a prior art feature was rare is plainly relevant to whether it was in fact well known, as Medtronic contended. Thus, the Board did not "dismiss explicit prior art" disclosures because of their rarity. Appellant's Opening Br. at 36. Instead, it reasonably discounted Medtronic's argument that the prevalence of side openings in prior art interventional cardiology devices contributed to a motivation to combine. *See, e.g.*, *'032 Decision*, at *15, *20.

Finally, with respect to the Side Opening Claims of the '776 patent, Medtronic contends the Board legally erred by crediting Teleflex's expert testimony that a skilled artisan would not be motivated to replace Kontos' funnel with Ressemann's side opening because of significant problems it would create. *See '776 Decision*, at *9. Medtronic's accusation of legal error is yet again mere disagreement with the Board's fact finding. Teleflex's expert explained that simply slicing off Kontos' funnel, as proposed, would introduce a gap between Kontos' support catheter and the inner wall of the guide catheter, exposing an interior spring coil and significantly increasing the likelihood of the device catching. J.A. 10009–11 ¶¶ 157–59. This is consistent with Ressemann's own disclosure that "[s]tent delivery catheters . . . are particularly subject to hanging-up on the proximal end" of the disclosed side opening, a problem Ressemann addresses in other embodiments. *See* J.A. 2145 at 25:17–29. Medtronic ignores the Board's express reliance on Teleflex's expert and asserts the Board instead came to its conclusion by erroneously focusing on Ressemann's hang-up-mitigating embodiments to the detriment of the side opening embodiment. The Board did not ignore Ressemann's side opening embodiment; it merely found Teleflex's expert testimony more persuasive than Medtronic's. That is not legal error.

For the reasons given, we affirm the Board's holding that Medtronic failed to establish that the Side Opening Claims are unpatentable as obvious.

### B. ONE-FRENCH CLAIMS

Claim 8 of the '032 patent is representative of the One-French Claims. It recites:

> 8. The device of claim 1 wherein the cross-sectional inner diameter of the coaxial lumen of the tubular structure is *not more than one French smaller* than the cross-sectional inner diameter of the guide catheter.

'032 patent at claim 8 (emphasis added).

Medtronic asserted two obviousness grounds against the One-French Claims: (1) Kontos in view of Adams and Takahashi, asserted against the claims of the '032 and '380 patents, and (2) Kontos in view of Ressemann and Takahashi, asserted against the claims of the '776 patent. *'032 Decision*, at *21; *'380 Decision*, at *21; *'776 Decision*, at *16. As it did for the Side Opening Claims, Medtronic posited the desire for increased back-up support would motivate a skilled artisan to replace Kontos' proximal funnel with the distal side openings of Adams and Ressemann. Medtronic reasoned this modification would allow a skilled artisan to incorporate Takahashi's five-in-six system, in which a 5-French inner catheter is inserted into a 6-French guide catheter. Teleflex opposed on the same grounds it opposed Medtronic's arguments concerning the Side Opening Claims, including by identifying objective evidence of the nonobviousness of the '776 patent One-French Claims, which also recite a side opening. It also argued removing Kontos' funnel would result in a greater than one-French gap between the inner extension catheter and guide catheter because of Kontos' protruding marker band and base. *See, e.g.*, *'032 Decision*, at *22. In reply, Medtronic argued a skilled artisan could account for that gap by making

additional modifications not proposed in its petition, including by recessing Kontos' marker band. *Id.*

The Board held Medtronic failed to establish the One-French Claims would have been obvious. *E.g., '032 Decision*, at *22. In doing so, the Board invoked the same reasons it gave for concluding the Side Opening Claims were not unpatentable, namely that Medtronic failed to establish it would have been obvious to replace Kontos' proximal funnel with a side opening and that Medtronic's reliance on new, extensive modifications in reply was more suggestive of hindsight than obviousness. *Id.* Additionally, with respect to the One-French Claims of the '776 patent, the Board found Teleflex's objective evidence was indicative of nonobviousness. *'776 Decision*, at *18.

On appeal, Medtronic argues the Board's decision must be reversed for the same reasons it contends the Board's analysis of the Side Opening Claims was legally erroneous. We reject those arguments for the reasons already given.

Additionally, we hold the Board's finding that Medtronic failed to establish a reasonable expectation of success to modify Kontos to achieve the One-French Claims was neither legally erroneous nor unsupported by substantial evidence. *See PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1196 (Fed. Cir. 2014) ("The presence or absence of a reasonable expectation of success is . . . a question of fact," reviewed for substantial evidence). The Board observed that replacing Kontos' funnel with a side opening would "require[] significant modifications to Kontos' device, modifications that were not proposed in the Petition." *'032 Decision*, at *22; *'380 Decision*, at *22; *'776 Decision*, at *20. The Board explained "[t]he extensive need to modify Kontos' device in a way not suggested in the Petition supports [Teleflex's] argument that the proposed modifications are based on a hindsight desire to recreate the claimed invention, as opposed to a known need in the art for such a device." *Id.* The Board did not err in discounting

modifications not presented in Medtronic's petition as indicative of hindsight. It was within the Board's discretion not to consider these untimely raised modifications. *See Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016) ("Once the Board identifies new issues presented for the first time in reply, neither this court nor the Board must parse the reply brief to determine which, if any, parts of that brief are responsive and which are improper.").

Further, the Board explained one of the modifications not raised in Medtronic's petition (recessing Kontos' marker band) "may not have been possible in the relevant time period." *See, e.g.*, *'032 Decision*, at *20. That is consistent with Teleflex's expert testimony explaining recessing the marker band as proposed was not a realistic option as of the patents' priority date because it would reduce the mechanical integrity of Kontos' device and weaken the attachment of Kontos' distal tip. *See* J.A. 5318. This is substantial evidence supporting the Board's finding. We therefore affirm the Board's determination that Medtronic failed to prove the One-French Claims would have been obvious by a preponderance of the evidence.

### C. DOUBLE-INCLINE CLAIMS

Claim 52 of the '776 patent is representative of the Double-Incline Claims. It recites:

> 52. A guide extension catheter for use with a guide catheter, comprising:
>
> a substantially rigid segment;
>
> a tubular structure defining a lumen and positioned distal to the substantially rigid segment; and
>
> a segment defining a partially cylindrical opening positioned between a distal end of the substantially rigid segment and a

> proximal end of the tubular structure, the segment defining the partially cylindrical opening having an angled proximal end, formed from a material having a greater flexural modulus than a flexural modulus of the tubular structure, and configured to receive one or more interventional cardiology devices therethrough when positioned within the guide catheter,
>
> wherein a cross section of the guide extension catheter at the proximal end of the tubular structure defines a single lumen;
>
> wherein the segment defining the angled proximal end of the partially cylindrical opening includes *at least two inclined regions*.

'776 patent at claim 52 (emphasis added).

Medtronic asserted the Double-Incline Claims would have been obvious over Kontos and Ressemann, which it argued together would have taught a catheter with a proximal side opening in view of Kataishi, which discloses a suction catheter with a distal tip with two inclined regions. *'776 Decision*, at *18. Medtronic argued a skilled artisan would have been motivated to include Kataishi's double-inclined opening to improve crossability and reduce kinking and because the double incline would increase the entry area of the side opening for receiving interventional devices. *Id.* Teleflex argued the combination would not have been obvious for the same reasons it opposed Medtronic's Side Opening Claims grounds. *Id.* Teleflex further contended a skilled artisan would not have been motivated to substitute Kataishi's *distal* tip, designed to flexibly conform to and remove thrombi, with the *proximal* side opening of the proposed Kontos-Ressemann combination, designed to receive interventional cardiological devices. Amongst other things, Teleflex submitted expert testimony

explaining such a substitution would increase kinking, not improve crossability, and have no impact on entry area, contrary to Medtronic's proposed motivations. *See, e.g.*, J.A. 12021 ¶ 81; J.A. 16668–72 ¶¶ 212–17.

The Board held Medtronic failed to prove the Double-Incline Claims unpatentable. *'776 Decision*, at *19. The Board first found Medtronic failed to provide a reasoned explanation for substituting Kataishi's suction-improving distal tip at the proximal opening of Kontos. *Id.* Even granting such a reason, however, the Board found Teleflex's expert testimony regarding the increased chance of kinking, together with Teleflex's objective evidence, defeated Medtronic's obviousness arguments. *Id.*

On appeal, Medtronic argues the Board's findings rest on legal error. In particular, it asserts the Board erred by (1) failing to address its argument that using Kataishi's double incline would increase the entry area for receiving interventional devices, (2) reasoning the location of Kataishi's tip vis-à-vis Kontos and Ressmann's proposed side opening (i.e., distal vs. proximal) weighed against a motivation to combine, and (3) effectively requiring physical incorporation of Kataishi into Kontos when it credited Teleflex's expert that using Kataishi's double-inclined tip would increase the risk of kinking.

Medtronic's arguments are unavailing. Even accepting Medtronic's arguments concerning motivations to combine, we conclude, as above, that Teleflex's objective evidence is sufficient to uphold the Board's determination that Medtronic failed to prove the Double-Incline Claims unpatentable.

We see no error in the Board's *prima facie* analysis. First, with respect to Medtronic's increased-area argument, the Board's failure to explicitly address that argument does not show the Board failed to consider it. *See Novartis AG v. Torrent Pharms. Ltd.*, 853 F.3d 1316, 1328 (Fed. Cir. 2017) ("[T]his court has said on multiple

occasions that failure to explicitly discuss every issue or every piece of evidence does not alone establish that the tribunal did not consider it."). The Board's alleged errors in failing to address that argument and doubting whether a skilled artisan would use Kataishi's distal tip for a proximal side opening are immaterial. The Board expressly found, in the alternative, that Teleflex's expert persuasively testified that using Kataishi's distal tip would increase the risk of kinking and that a skilled artisan therefore would not have been motivated to use that structure. *See '776 Decision*, at *19. Medtronic contends its expert testified otherwise, but the presence of conflicting evidence does not render the Board's finding unsupported by substantial evidence. *Consolo v. Fed. Mar. Comm'n*, 383 U.S. 607, 620 (1966) ("[T]he possibility of drawing two inconsistent conclusions from the evidence does not prevent an administrative agency's finding from being supported by substantial evidence.").

Lastly, Medtronic's contention that the Board required physical incorporation of the references is without merit. Medtronic argues the Board's finding that kinking would discourage skilled artisans from using Kataishi's distal tip was improperly predicated on using the materials disclosed in Kataishi. Yet, the Board's decision makes no reference to Kataishi's materials. Instead, the Board credited Teleflex's expert testimony explaining Kataishi's tip is designed to be "highly flexible" and that high degree of flexibility "would increase the risk of kinking." *'776 Decision*, at *19 (citing J.A. 12021 ¶ 81). The Board's decision does not demonstrate that it improperly required physical incorporation.

We conclude the Board did not err in its analysis and that substantial evidence supports its findings. We therefore affirm the Board's determination that Medtronic failed to carry its burden to prove the Double-Incline Claims would have been obvious.

### D. SUBSTITUTE CLAIMS

During the *inter partes* review proceedings for the '032 and '380 patents, Teleflex filed contingent motions to amend proposing certain substitute independent claims. Proposed substitute claim 23 of the '032 patent is representative of the Substitute Claims:

> 23. A device for use with a standard 6 French guide catheter, the standard guide catheter having a continuous lumen extending for a predefined length from a proximal end at a hemostatic valve to a distal end adapted to be placed in a branch artery, the continuous lumen of the guide catheter having a circular cross-sectional inner diameter sized such that interventional cardiology devices are insertable into and through the lumen to the branch artery, the device comprising, in a distal-to-proximal direction:
>
> a flexible tip portion defining a tubular structure having a circular cross-section and a length that is shorter than the predefined length of the continuous lumen of the standard 6 French guide catheter, the tubular structure having a cross-sectional outer diameter sized to be insertable through the cross-sectional inner diameter of the continuous lumen of the guide catheter and defining a coaxial lumen having a cross-sectional inner diameter of at least 0.056 inches through which interventional cardiology devices are insertable;
>
> *a substantially rigid side opening* that includes a first inclined region, a second inclined region, and a non-inclined concave

> track between the first and second inclined regions; and
>
> *a substantially rigid portion* proximal of and operably connected to, and more rigid along a longitudinal axis than, the flexible tip portion and defining a rail structure without a lumen and having a maximal cross-sectional dimension at a proximal portion that is smaller than the cross-sectional outer diameter of the flexible tip portion and having a length that, when combined with the length of the flexible distal tip portion, defines a total length of the device along the longitudinal axis that is longer than the length of the continuous lumen of the guide catheter,
>
> such that when at least a distal portion of the flexible tip is extended distally of the distal end of the guide catheter, at least a portion of the proximal portion of the substantially rigid portion extends proximally through the hemostatic valve in common with interventional cardiology devices that are insertable into the guide catheter.

*See '032 Decision*, at *24–25 (emphases added).

In each proceeding, Medtronic argued the proposed substitute claims lacked adequate written description in the original application to which the '032 and '380 patents claim priority. In particular, Medtronic contended the substitute claims encompass catheters with side openings physically separate from the substantially rigid portion, whereas the written description only describes side openings that were part of the substantially rigid portion. In addition, Medtronic argued the substitute claims would have been obvious over Kontos, Kataishi, and Takahashi

on the same bases it argued the Double-Incline Claims would have been obvious.[13]

The Board determined the substitute claims had adequate written description support and would not have been obvious over Medtronic's asserted grounds. *'032 Decision*, at *26, 30–32; *'380 Decision*, at *26, *30–32. On appeal, Medtronic argues the Board erred by failing to adequately address its written description arguments and by committing the same legal mistakes it allegedly made in analyzing the patentability of the Double-Incline Claims.

We reject Medtronic's arguments concerning alleged errors in the Board's analysis of Medtronic's obviousness grounds for the same reasons we conclude the Board did not err in its analysis of the Double-Incline Claims. We further reject Medtronic's arguments regarding lack of written description. In a parallel *inter partes* review proceeding against related U.S. Patent RE47,379, which claims priority to the same original application at issue here, Medtronic raised identical written description arguments. We today affirmed the Board's written description finding in that appeal, which resolves this issue. *See*

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[13] Medtronic also argued the substitute claims would have been obvious over U.S. Patent No. 7,736,355 (Itou) in view of Ressemann or Kataishi. On appeal, Medtronic argues the Board erred by failing to address the Itou-Kataishi grounds. In a separate decision, we affirmed the Board's finding in a parallel proceeding that Itou postdates May 3, 2006, the priority date of the patents-in-suit, and consequently is not prior art. *See Medtronic, Inc. v. Teleflex Innovations S.À.R.L.*, No. 2021-2356, 2023 WL 3606143, at *1 (Fed. Cir. May 24, 2023). We therefore need not address the Board's alleged failure to address this ground.

*Medtronic, Inc. v. Teleflex Innovations S.à.r.l.*, Nos. 21-2359, 21-2362, 21-2366 (Fed. Cir. June 5, 2023).

## CONCLUSION

We have considered the parties' other arguments and find them unpersuasive. For the reasons given, we affirm the Board's decisions holding the Side Opening, Double-Incline, and One-French Claims not unpatentable and granting issuance of the Substitute Claims.

**AFFIRMED**