

NOTE: This disposition is nonprecedential.

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

BELDEN INC.,
Appellant

v.

BERK-TEK LLC,
Appellee

2014-1676

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. IPR2013-
00058.

BELDEN INC.,
Appellant

v.

BERK-TEK LLC,
Appellee

2014-1677

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2013-00069.

Decided: April 17, 2015

MATTHEW B. LOWRIE, Foley & Lardner LLP, Boston, MA, argued for appellant. Also represented by AARON W. MOORE, MATTHEW A. AMBROS.

JAMES S. BLANK, Kaye Scholer LLP, New York, NY, argued for appellee. Also represented by BENJAMIN C. HSING, DAVID SOOFIAN; NISHA AGARWAL, Palo Alto, CA; JOSEPH SOFER, GREGORY C. ANTRIM, Sofer & Haroun LLP, New York, NY.

Before LOURIE, REYNA, and CHEN, *Circuit Judges*.

LOURIE, *Circuit Judge*.

Belden Inc. (“Belden”) appeals from two related *inter partes* review decisions of the United States Patent and Trademark Office, Patent Trial and Appeal Board (“Board”). In the first, Belden appeals from the Board’s decision cancelling claims 1–34 of U.S. Patent 7,977,575 (“the ’575 patent”) as anticipated under 35 U.S.C. § 102 and/or obvious under 35 U.S.C. § 103.¹ *See Belden, Inc. v. Berk-Tek, LLC*, IPR2013-00058, Paper No. 29 (P.T.A.B. Apr. 28, 2014) (“*Board Decision I*”). In the second, Belden

¹ Because the applications of the ’575 and ’061 patents were filed before March 16, 2013, the pre-Leahy-Smith America Invents Act versions of §§ 102 and 103 apply. *See* Pub L. No. 112-29, 125 Stat. 284 (2011); 35 U.S.C. §§ 102, 103 (2006).

appeals from the Board’s decision cancelling claims 1–21 of U.S. Patent 7,663,061 (“the ’061 patent”), the parent of the ’575 patent, as anticipated under § 102 or obvious under § 103. *See Belden, Inc. v. Berk-Tek, LLC*, IPR 2013-00069, Paper No. 24 (P.T.A.B. Apr. 28, 2014) (“*Board Decision II*”). Because the Board did not err, we affirm.

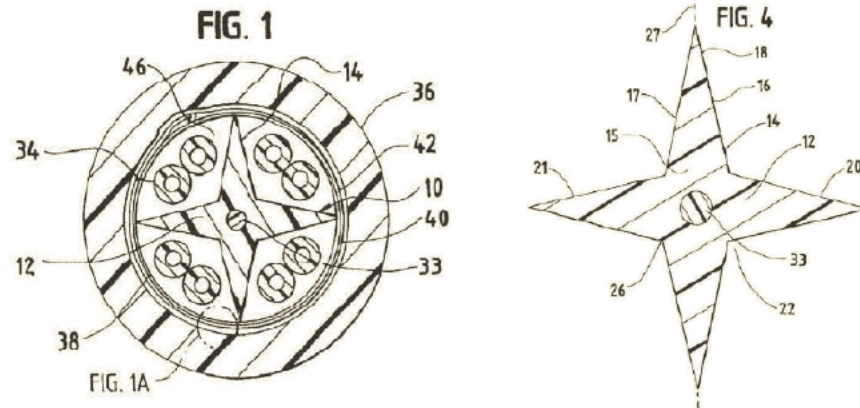
BACKGROUND

Belden is the assignee of the ’575 and the ’061 patents (“the patents”), which relate to high performance data cables utilizing twisted pairs of conductors. According to the patents, high performance data cables must meet “exacting specifications” relating to data speed and electrical characteristics, such as controlling near-end cross-talk. ’575 patent col. 1 ll. 39–41.² To overcome the cost and process constraints frustrating prior art attempts to satisfy those “exacting specifications,” *e.g.*, individually shielded twisted pairs, the patents use “an interior support with grooves” that can “accommodate at least one signal transmission conductor.” *Id.* col. 2 ll. 1–3. The patents suggest that using an “interior support with grooves” imparts structural stability, improves near-end cross-talk control, and is “lighter, cheaper, and easier to terminate than [prior art] designs.” *Id.* col. 2 ll. 5–15.

The claimed data cable incorporates an interior support 10 consisting of a central region 12 and a plurality of prongs 14 that extend along the length of the interior support 10 and radiate outward from the central region 12. *Id.* col. 4 ll. 21–33; *see id.* fig. 1. Each pair of prongs 14 defines a groove 22 that also extends along the length of the interior support 10. *Id.* col. 4 ll. 51–55; *see id.* fig. 4. Within each groove resides a twisted pair of conductors 34

² The patents share an identical specification, in relevant part. We therefore refer only to the ’575 patent when discussing the specification.

that transmits data. *Id.* col. 5 ll. 19–20. The interior support 10 and the twisted pairs 34 all reside within the outer jacket 36. *Id.* col. 5 l. 34; *see id.* fig. 1. Figures 1 and 4, depicted below, show vertical cross-sections of the claimed data cable and its interior support, respectively.



Id. figs. 1, 4.

Of the challenged claims of the '575 patent, independent claim 1 is representative and reads as follows:

1. An unshielded twisted pair data communications cable comprising:
 - a plurality of twisted pair conductors configured to carry data communications signals;
 - a non-conductive interior support consisting of at least one non-conductive material and having a surface that defines a plurality of *channels* in the data communications cable within which the plurality of twisted pair conductors are individually disposed; and
 - an outer jacket longitudinally enclosing the plurality of twisted pair conductors and the

non-conductive interior support to form the data communications cable, the outer jacket being formed of a non-conductive material;

wherein the outer jacket in combination with the non-conductive interior support maintains the plurality of twisted pair conductors within the *channels* defined by the surface of the non-conductive interior support; and

wherein the unshielded data cable does not include a shield between the outer jacket and the twisted pair conductors and the non-conductive interior support.

Id. col. 6 l. 51–col. 7 l. 3 (emphases added). Claim 12, which is also representative and depends from claim 1, further requires “the plurality of twisted pair conductors and the non-conductive interior support [to be] *twisted together* about a common axis to close the cable.” *Id.* col. 7 ll. 50–53 (emphasis added).

Of the challenged claims of the '061 patent, independent claim 1 is representative and reads as follows:

1. A communications cable comprising:

a plurality of twisted pairs that carry communications signals;

a pair separator disposed among the plurality of twisted pairs, the pair separator comprising a central body portion and a plurality of arms radially extending from the central body portion, each pair of adjacent arms defining a *channel*;

a cable covering surrounding the plurality of twisted pairs and the pair separator along the length of the cable;

wherein at least one twisted pair of the plurality of twisted pairs is respectively located in the *channel* defined by each pair of adjacent arms;

wherein the plurality of twisted pairs and the pair separator are *helically twisted together* along the length of the cable; and

wherein the cable covering does not include an electrically conductive shield.

'061 patent col. 6 ll. 42–59 (emphases added). Claim 6, which depends from claim 1, requires “the communications cable [to be] about *0.300 to 0.400 is* [sic] *diameter.*” *Id.* col. 7 ll. 3–5 (emphasis added). And claim 21, which depends from claim 7, further requires “the pair separator and the plurality of twisted pairs [to be] *cabled in an S-Z configuration.*” *Id.* col. 8 ll. 46–48 (emphasis added).

In November 2012, Berk-Tek, LLC (“Berk-Tek”) filed a petition for *inter partes* review, challenging claims 1–34 of the '575 patent. One month later, Berk-Tek filed a second petition for *inter partes* review, challenging claims 1–21 of the '061 patent. The Board instituted the reviews and consolidated the oral hearings. *Board Decision I* at 2.

The Board first construed the two claim limitations raised in the reviews:³ “channels” and “twisted together.”⁴

³ The two Board decisions have a substantially similar claim construction analysis for each of the disputed terms. We therefore refer only to *Board Decision I* when discussing claim construction.

⁴ The '061 patent recites “helically twisted together,” but neither party suggests that adding “helically” makes any meaningful difference, and the Board ultimately construed the two limitations similarly. Compare *Board Decision I* at 18, with *Board Decision II* at 17.

It determined that “a channel, as a long gutter, groove, or furrow, is a type of open space defined by the interior support within which at least one of the plurality of twisted pairs is located.” *Id.* at 10. After noting that the specification neither defines nor uses the term “channels,” the Board relied on the term’s dictionary definitions and U.S. Patent 7,339,116 (“the ’116 patent”), the parent of the ’061 patent and the consequent grandparent of the ’575 patent, which the patents incorporated by reference. *Id.* at 8–9. The Board then rejected Belden’s argument that “channels” had to be “substantially enclosed passages” defined by the interior support *and* the jacket as inconsistent with the ordinary meaning and the claims’ explicit requirement that *only* the contours of the interior support define the claimed “channels.” *Id.* at 12–13. In so doing, the Board dismissed Belden’s expert testimony as merely conclusory and irrelevant in light of the “unambiguous” intrinsic record. *Id.* at 14.

The Board next determined that “twisted together” simply requires “the twisted pairs and the interior support twisted together about a common axis along the length of the cable. The claims are not limited to a structure produced by a certain method of manufacture.” *Id.* at 17. The Board thus rejected Belden’s argument that the claims recite a structure produced by a specific method, *i.e.*, “twisted along with,” because the claims at issue are apparatus claims, not product-by-process claims. *Id.* The Board further noted that Belden failed to produce evidence that “twisting the pairs along with the interior support,” rather than “separately twisting the components and [then] intertwining them,” generated different structures. *Id.* at 18.

In light of those constructions, the Board found claims 1–34 of the ’575 patent unpatentable under § 102 and/or § 103. *Id.* at 35. First, the Board found claims 1–9, 12–15, 17, 20, 21, 23, and 24 anticipated by Canadian Patent Application 2,058,046 (“Tessier”). The Board noted that

Tessier, like the '575 patent, discloses a data cable comprising three elements: twisted pairs of conductors, “a spacer means” defining “recess regions in which the conductors are disposed,” and an outer jacket. *Id.* at 19. The Board then found that Tessier’s “recess regions,” defined by the “spacer means,” satisfied the “open space defined by the interior support” construction of “channels” in the '575 patent. *Id.* at 21. The Board further found that Tessier’s “projections 24 and thus the recesses 26 extend in helical fashion along the core member 20 to allow the pairs 14 to lie within the recesses in stranded fashion,” satisfying the as-construed “twisted together” limitation of the '575 patent. *Id.* at 20.

The Board next concluded that claims 9–11, 16, 18, 19, 22, 23, and 25–34 would have been obvious over Tessier and other references, for similar reasons. *See id.* at 24–33 (stating that Belden only repeated its arguments relating to Tessier’s disclosure of the “channels” and “twisted together” limitations and failed to raise any additional challenges to the obviousness-based grounds). The Board lastly found claims 29, 31, and 33 anticipated by Japanese Patent No. Sho43(1968)-15470 (“JP '470”), noting that JP '470 also discloses a data cable with twisted pair conductors lying disposed within channels, wherein the twisted pair conductors and the support are twisted together. *Id.* at 34.

In its second decision, the Board found claims 1–21 of the '061 patent unpatentable under either § 102 or § 103. *Board Decision II* at 25. The Board first found claims 1–5 and 7–20 anticipated by Tessier, for the reasons noted above. *Id.* at 20–22. The Board then concluded that claim 6 would have been obvious over Tessier and Canadian Patent Application 2,071,417 (“Meer”), which the Board found teaches “the desirability of minimizing the outside diameter” of data cables and specifically discloses a data cable with a diameter between 0.27 and 0.43 inches. *Id.* at 23. The Board lastly concluded that claim

21 would have been obvious over Tessier and Japanese Patent No. Sho56(1981)-7307 (“JP ’307”), which the Board found “discloses S-Z stranding of cable components.” *Id.* at 24–25.

Belden timely appealed from both decisions, and we have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

We review the Board’s legal conclusions *de novo*, *In re Elsner*, 381 F.3d 1125, 1127 (Fed. Cir. 2004), and the Board’s factual findings underlying those determinations for substantial evidence, *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). “Substantial evidence . . . means such relevant evidence as a reasonable mind might accept as adequate to support a conclusion.” *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 217 (1938). Anticipation is a question of fact, which we review for substantial evidence. *In re Gleave*, 560 F.3d 1331, 1334–35 (Fed. Cir. 2009). Obviousness, on the other hand, is a question of law based on underlying factual findings, including what a reference teaches. *In re Baxter Int’l, Inc.*, 678 F.3d 1357, 1361 (Fed. Cir. 2012); *Rapoport v. Dement*, 254 F.3d 1053, 1060–61 (Fed. Cir. 2001).

During an *inter partes* review, the Board construes disputed limitations according to their broadest reasonable interpretation consistent with the specification. *In re Cuozzo Speed Techs., LLC*, 778 F.3d 1271, 1281 (Fed. Cir. 2015). We then review that construction according to the standard set forth in *Teva Pharmaceuticals U.S.A., Inc. v. Sandoz, Inc.*, 574 U.S. ___, 135 S. Ct. 831 (2015). *Id.* at 1282. We review the ultimate construction *de novo* and the underlying factual determinations involving extrinsic evidence for substantial evidence. *Id.* at 1282–83.

Belden fundamentally argues that the Board erred in construing “channels” and “twisted together,” and therefore erred in finding (1) claims 1–9, 12–15, 17, 20, 21, 23,

and 24 of the '575 patent anticipated by Tessier; (2) claims 9–11, 16, 18, 19, 22, 23, and 25–34 of the '575 patent obvious over Tessier and other references; (3) claims 29, 31, and 33 of the '575 patent anticipated by JP '470; and (4) claims 1–5 and 7–20 of the '061 patent anticipated by Tessier. Belden also disputes the Board's obviousness conclusions relating to claims 6 and 21 of the '061 patent on additional grounds. Belden does not contest, however, the anticipation findings or the obviousness conclusions based on the Board's claim constructions. We address each of those arguments in turn.

I

Belden first argues that the Board erred by construing “channels” to mean “grooves.” According to Belden, the patents exclusively use the term “groove” to refer to the area between prongs, as shown in Figure 4, and the term “channels” to refer to the substantially enclosed spaces that form after the jacket envelops the prongs and twisted pairs, as shown in Figure 1. Belden contends that that distinction permeates the intrinsic record and, moreover, that the Board had no justifiable reason to ignore its unrebutted expert testimony on that point. Belden further argues that the Board incorrectly relied on the '116 patent for a rationale that was neither presented in the petition for review nor addressed in the Board's decision to institute.

Berk-Tek responds that the ordinary meaning and the intrinsic record compel the Board's construction. Berk-Tek first notes that the specification does not recite, much less define, the term “channels.” Thus, according to Berk-Tek, the Board necessarily relied on dictionaries, provided by Belden, and correctly adopted the broadest reasonable interpretation. Berk-Tek further argues that the claims, which require the interior support to define the boundaries of the “channels,” also support the Board's construction. Finally, Berk-Tek contends that the Board correctly

relied on the '116 patent because it is part of the prosecution history and the patents incorporate it by reference.

We agree with Berk-Tek that the Board correctly construed “channels” according to its ordinary meaning and the intrinsic record. When construing claim terms, the Board may rely on dictionaries “so long as the dictionary definition does not contradict any definition found in or ascertained by reading the patent document.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1322–23 (Fed. Cir. 2005) (en banc) (citations omitted). Here, the specification does not recite, much less define, “channels.” The dictionaries thus provide an adequate starting point, and simply define “channels” as “a long gutter, groove, or furrow.” *Board Decision I* at 8. Nothing in the intrinsic record conflicts with that ordinary meaning.

Indeed, the specification and prosecution history only elaborate upon that understanding. The patents both derive from the '116 patent, which describes the term “channel” as a type of “open space.” Because the Board should construe claims consistently across a family of related patents, *NTP Inc. v. Research in Motion, Ltd.*, 418 F.3d 1282, 1293 (Fed. Cir. 2005), the Board correctly understood “channels” to further mean an “open space.” Belden argues that the Board incorrectly relied on the '116 patent because it was neither raised in the petition for review nor addressed in the Board’s decision to institute. We find that argument unpersuasive. The '116 patent is the parent of the '061 patent and the consequent grandparent of the '575 patent, and the patents have incorporated it by reference. The '116 patent is thus part of the prosecution history and the specification; the Board appropriately relied on it for guidance.

Moreover, the Board’s construction is consistent with the claim language, which simply describes a channel as an open space defined by the interior support. *See, e.g.*, '575 patent col. 6 ll. 55–57 (“[A] non-conductive interior

support . . . having a surface that defines a plurality of channels.”); ’061 patent col. 6 ll. 53–54 (describing the channel as “defined by each pair of adjacent arms” of the interior support). Belden argues that “channels” should instead be substantially enclosed spaces defined by the interior support *and* the jacket. We find that argument unpersuasive, however. Not only does it contradict the plain language of the claims, *see, e.g.*, ’575 patent col. 6 ll. 64–67 (“[W]herein the outer jacket in combination with the conductive interior support *maintains* the plurality of twisted pair conductors within the channels *defined* by the non-conductive interior support.”) (emphases added), but it also ignores the specification, which offers no guidance to one of ordinary skill as to what “substantially enclosed” would mean.

We also reject Belden’s argument that the Board should have accepted its expert testimony. As an initial matter, a tribunal is not required to accept expert testimony simply because it was not challenged and the declarant was not deposed. *See Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 147 F.3d 1374, 1379 (Fed. Cir. 1998) (“The fact that Applied Medical did not contest this point with testimony from one of its own experts no more resolves the factual question in Surgical’s favor”). Nonetheless, the Board correctly rejected Belden’s expert testimony proffered by the co-inventor, finding that it was “conclusory” and “not supported by a citation to the Specification or an ordinary meaning,” *Board Decision I* at 14, as we have held that “conclusory, unsupported assertions by experts as to the definition of a claim term are not useful to a [tribunal],” *Phillips*, 415 F.3d at 1318 (citations omitted).

Accordingly, we affirm the Board’s construction that “a channel, as a long gutter, groove, or furrow, is a type of open space defined by the interior support within which at least one of the plurality of twisted pairs is located.”

Belden additionally argues that Tessier does not disclose prongs extending far enough towards the jacket to create substantially enclosed channels, and thus it cannot anticipate or be used to render the claims obvious. That argument, however, relies exclusively on Belden’s proffered construction of “channels,” which we have rejected. Belden does not question the Board’s finding that Tessier teaches the “channels” limitation as construed by the Board. Accordingly, we do not disturb the Board’s anticipation findings and obviousness conclusions relying on that construction of “channels.”

II

Belden next argues that the Board erred by allowing “twisted together” to be achieved by any method. According to Belden, the structure required by the patents is the product of twisting the interior support *along with* the twisted pairs. That structure, Belden contends, necessarily differs from a cable derived from a preformed helix. Thus, Belden continues, Tessier, which only discloses preformed helixes, does not teach the “twisted together” limitation of the patents. Belden also argues that the Board erred in requiring Belden to prove that the resulting structures differ, and that the Board unjustifiably ignored its unrebutted expert testimony.

Berk-Tek responds that the Board correctly recognized that “twisted together” is not the product of a specific method of manufacture. Rather, Berk-Tek argues, the claims are drawn to a twisted structure generally. Moreover, Berk-Tek notes, the patents do not disclose a method of twisting the interior support *along with* the twisted pairs of conductors, as Belden suggests. Berk-Tek also contends that Tessier is not limited to preformed helixes, but instead generally discloses projections and recesses that extend in helical fashion along the core member. Finally, Berk-Tek argues that the record lacked evidence suggesting that the method of manufacture generates

different resulting structures; that the Board correctly discounted Belden's expert testimony; and that the Board did not incorrectly shift the burden to Belden—Belden simply failed to rebut the prima facie case.

We agree with Berk-Tek and the Board that “twisted together” simply connotes a twisted structure; it does not further require twisting by a certain method of manufacture. As Berk-Tek notes, the claims are product claims drawn to a data cable. *See, e.g.*, '575 patent col. 6 ll. 51–52; *id.* col. 8 ll. 3–5. They require several structural features, including twisted pair conductors and an interior support. *See, e.g., id.* col. 6 ll. 55–59. Some claims also require the interior support and twisted pairs “twisted together” about a common axis.” *See, e.g.,* col. 7 l. 53. Yet no claim recites a specific method by which the “twisted together” structure must be achieved. And as we have held, a product claim does not automatically become a product-by-process claim simply because a limitation recites a process characteristic, like “twisted together.” *3M Innovative Props. Co. v. Avery Dennison Corp.*, 350 F.3d 1365, 1371–72 (Fed. Cir. 2003). Indeed, the specification does not purport to describe a specific method of twisting the support and the conductors to achieve the claimed “twisted together” structure. The Board was correct not to require one here. We therefore affirm the Board's construction of “twisted together.”

Belden then argues that, despite the Board's construction, the claims nevertheless require the interior support to be *twisted along with* the twisted pairs, and that the resulting structure differs from that disclosed in Tessier. We find that argument unpersuasive. Again, the claims do not require a specific method of manufacture. Moreover, Belden's argument presupposes that Tessier only discloses preformed helixes, and that a preformed helix necessarily imparts a different structure than a cable formed by Belden's proposed twisted-along-with method. Tessier is not so limited. Rather, as the Board correctly

found, Tessier recites that “the projections 24 and thus the recesses 26 extend in helical fashion along the core member.” ’575 Joint Appendix 187. It does not recite a two-step process, whereby the support is first formed into a helical structure and the conductors are then placed within the channels, as Belden contends. In fact, Tessier’s disclosure echoes that of the patents, where the “[prongs] extend helically along the length of the star separator.” ’575 patent col. 5 ll. 28–32. Furthermore, the Board correctly rejected Belden’s expert testimony as conclusory and unsupported, for the reasons noted above, and simply held that the record lacked evidence that the structures of a preformed helix and a twisted-along-with cable differ. The Board did not place a heavy burden on Belden; Berk-Tek simply established a *prima facie* case, which Belden failed to rebut.

Belden only contests the Board’s anticipation findings and obviousness conclusions based on its proffered understanding of “twisted together,” which we have rejected. Accordingly, we do not disturb the Board’s anticipation findings and its obviousness conclusions relying on the Board’s correct construction of “twisted together.”

III

Belden lastly argues that the Board erred in concluding that claims 6 and 21 of the ’061 patent would have been obvious. With respect to claim 6, Belden contends that the Board erred by failing to identify a reason to combine Tessier and Meer, and, moreover, by relying on a proposed combination of prior art references that was not raised in the petition or in the decision to institute. With respect to claim 21, Belden argues that the Board failed to appreciate that Tessier’s preformed core would not assume the S-Z stranded configuration disclosed in JP ’307.

Berk-Tek responds that, with respect to claim 6, Meer not only teaches the benefits of decreasing cable diameter, *i.e.*, reducing cable congestion, but also discloses a cable

with a diameter between 0.27 and 0.43 inches. Thus, according to Berk-Tek, the Board correctly concluded that it would have been obvious to apply the improvement of Meer to the cable of Tessier. In addition, Berk-Tek notes that its petition raised the proposed combination and, moreover, that Belden never argued otherwise before the Board. With respect to claim 21, Berk-Tek argues that Belden's position presupposes that Tessier only teaches preformed helixes, which it does not.

We agree with Berk-Tek that it would have been obvious to apply the improvement of Meer to the data cable of Tessier, and therefore sustain the Board's conclusion that claim 6 would have been obvious. First, and contrary to Belden's assertion, Berk-Tek raised the Tessier and Meer combination in its petition for review, *see* '061 Joint Appendix ('061 J.A.) 76; Belden thus had ample opportunity to respond, and the Board did not err in relying on that combination to reject claim 6. Second, the Board's findings regarding Meer's disclosures are supported by substantial evidence. Meer recites that "cable congestion is presenting an ever increasing problem which is exacerbated by the large cable diameters," '061 J.A. at 200, and offers reducing cable diameter to between 0.27 and 0.43 inches as the solution, *see id.* at 200–02. The Board thus correctly found that it was obvious to apply the improvement of Meer to the data cable of Tessier. Lastly, the Board found that Belden only recycled its "channels" and "twisted together" arguments, *Board Decision II* at 23, and thus failed to raise new arguments disputing the Meer-based obviousness rejection, *see* '061 J.A. at 530 ("[Belden] gives no independent argument for the validity of claim 6."). For the reasons we noted above, the Board correctly rejected those arguments again here. We therefore conclude that the Board did not err in holding that claim 6 would have been obvious over Tessier and Meer.

We also agree with Berk-Tek that the Board correctly concluded that claim 21 would have been obvious over

Tessier and JP '307. First, the Board's finding that JP '307 discloses S-Z stranding of cable components is supported by substantial evidence. '061 J.A. at 188 ("Herein, the rotation direction of rotation frame 12 is reversed, and synchronized with wire storing length l of wire storing component 13; thus, SZ stranded wire in which stranded part S and stranded part Z are alternated, is fed from stranding component 11 at every length of l "). Second, as with the Tessier and Meer rejection, the Board noted that Belden only recited its "channels" and "twisted together" arguments to dispute the JP '307-based rejection. *Board Decision II* at 24. *Compare* '061 J.A. at 480–82, *with id.* at 483. We again find that the Board correctly rejected those arguments. Lastly, we agree with Berk-Tek that Belden's argument assumes that Tessier only teaches preformed helixes. As we noted above, however, Tessier is not so limited. We therefore find that argument unpersuasive. Accordingly, the Board correctly held that claim 21 would have been obvious over Tessier and JP '307.

CONCLUSION

We have considered the remaining arguments, but we find them unpersuasive. For the foregoing reasons, the Board's decisions cancelling claims 1–34 of the '575 patent and claims 1–21 of the '061 patent are affirmed.

AFFIRMED.