

NOTE: This disposition is nonprecedential.

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

**TRANSTEX INC., FKA TRANSTEX COMPOSITE
INC.,**
Appellant

v.

**LAYDON COMPOSITES LTD., WABCO HOLDINGS
INC.,**
Cross-Appellants

**ANDREW HIRSHFELD, PERFORMING THE
FUNCTIONS AND DUTIES OF THE UNDER
SECRETARY OF COMMERCE FOR
INTELLECTUAL PROPERTY AND DIRECTOR OF
THE UNITED STATES PATENT AND TRADEMARK
OFFICE,**
Intervenor

2020-1576, 2020-1624

Appeals from the United States Patent and Trademark
Office, Patent Trial and Appeal Board in No. IPR2018-
01319.

Decided: March 24, 2021

JOHN CARACAPPA, Steptoe & Johnson, LLP, Washington, DC, for appellant. Also represented by SCOTT RICHEY, JOHN WILLIAM TOTH; ROBERT KAPPERS, Chicago, IL.

MICHAEL HARTMANN, Leydig, Voit & Mayer, Ltd., Chicago, IL, for cross-appellants. Also represented by PAUL JOHN FILBIN, WESLEY MUELLER.

MOLLY R. SILFEN, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, for intervenor. Also represented by THOMAS W. KRAUSE, ROBERT J. MCMANUS, FARHEENA YASMEEN RASHEED.

Before PROST, *Chief Judge*, SCHALL and REYNA, *Circuit Judges*.

SCHALL, *Circuit Judge*.

DECISION

Transtex, Inc., formerly known as Transtex Composite Inc. (“Transtex”), is the owner of U.S. Patent No. 8,449,017 (“the ’017 patent”). The ’017 patent is directed to a “trailer skirt” for a road trailer. A trailer skirt is one type of fairing used to reduce aerodynamic drag on a trailer when it is being hauled. It thereby improves fuel efficiency. ’017 patent, col. 1, ll. 31–33. The ’017 patent has 20 claims. Claims 1, 11, and 17 are independent claims.

WABCO Holdings, Inc. and Laydon Composites, Ltd. (collectively, “WABCO”) petitioned the United States Patent and Trademark Office, Patent Trial and Appeal Board (“Board”), for *inter partes* review of the ’017 patent. After instituting and conducting *inter partes* proceedings, on January 20, 2020, the Board rendered its decision. *WABCO Holdings Inc. v. Transtex Composites Inc.*, No. IPR2018-01319, Paper 25, at 1 (Jan. 10, 2020) (“Final Written Decision”). In its decision, the Board held that WABCO had proved by a preponderance of the evidence that claims

1, 5–11, and 15–19 of the '017 patent were unpatentable as obvious over the combination of U.S. Patent No. 7,578,541 to Layfield et al. (“Layfield”) and U.S. Patent No. 5,280,990 to Rinard (“Rinard”). *Id.* at 64–65. The Board also held, however, that WABCO had failed to prove that claims 2–4, 12–14, and 20 of the patent were unpatentable as obvious over the same combination. *Id.*

Transtex now appeals the Board’s holding that claims 1, 5–11, and 15–19 of the '017 patent were unpatentable. For its part, WABCO cross-appeals the Board’s decision that claims 2–4 and 12–14 of the '017 patent were not shown to be unpatentable. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A). For the reasons stated below, we *affirm* the Board’s decision in all respects.

BACKGROUND

I

For purposes of this appeal, independent claim 1 is representative of the claims of the '017 patent. It recites as follows:

1. *A resilient strut adapted to secure an aerodynamic skirt to a trailer, the aerodynamic skirt being adapted to be substantially longitudinally mounted to the trailer,*

the aerodynamic skirt comprising a skirt panel including a front portion and a rear portion, the front portion being adapted to be mounted toward a forward portion of the trailer and the rear portion being adapted to be mounted toward a rear portion of the trailer in a configuration reducing air drag about the trailer, the skirt panel being adapted to move away from the configuration reducing air drag about the trailer when contacting a foreign object and to recover the configuration reducing air drag about the trailer thereafter,

the resilient strut being adapted to sustain an elastic deformation when a load is applied to the resilient strut when the skirt panel moves away from the configuration reducing air drag about the trailer and to self-recover the resilient strut original shape when the load is removed, the resilient strut including a longitudinal shape variation adapted to change a mechanical strength of the resilient strut and influence a stiffness of the resilient strut.

'017 patent, col. 11, ll. 2–23 (emphases added).

It is the “resilient strut” limitation of claim 1 that is at issue on appeal.¹ The term “resilient strut” also appears in independent claims 11 and 17, along with the variant “resilient support” in claim 11. See '017 patent, col. 12, ll. 1–10, 33–36, and 43–50. Accordingly, references herein to “resilient strut” include “resilient support.”

As noted, the Board found all the limitations of claims 1, 5–11, and 15–19 present in the combination of Layfield and Rinard. Layfield is directed to a trailer skirt that has “relatively-flexible side panels . . . to provide improved aerodynamic airflow characteristics.” Layfield, col. 5, ll. 50–54. Layfield discloses two types of panels included in its trailer skirt: “interconnected skirt panels” and “flexible lower panel components.” *Id.* at col. 6, ll. 59–63, col. 14, ll. 12–18, col. 16, ll. 4–9, Fig. 7. Layfield discloses that its skirt panels are “rigidly secur[ed]” to a trailer using support struts. *Id.* at col. 6, ll. 47–49; col. 15, ll. 10–13, Fig. 7.

The Board found that WABCO had sufficiently demonstrated that Layfield’s support struts have a “tapered design” that “provides even greater resiliency or flexibility than it would have if it had a constant cross-sectional size.”

¹ Transtex does not challenge the Board’s ruling that the “aerodynamic skirt” limitation of claim 1 was disclosed by Layfield. See Final Written Decision at 31–33.

Final Written Decision at 33–34 (citation omitted). Accordingly, the Board found that Layfield’s struts disclose the claimed “shape variation adapted to change a mechanical strength of the resilient strut and influence a stiffness of the resilient strut.” *Id.* The Board found, however, that Layfield did not teach a strut that was “resilient.” The Board stated:

We find that although Layfield mentions “relatively-flexible side panels” . . . and focuses on providing flexible lower panel components . . . , Layfield does not contain any express disclosure concerning the flexibility of the struts. Nor does Layfield include any discussion about the desirability of strut flexibility. The closest Layfield comes to discussing flexibility of the struts is by frequently referring to the struts as “support struts” . . . and discussing the use of a “bracket means,” which is on the struts, to “rigidly secure” the skirt panels to the trailer

Id. at 25–26 (citations omitted).

For the “resilient strut” limitation, the Board turned to Rinard, finding that Rinard is directed to “a vehicle drag reduction system, including top and bottom scoops to direct airflow.” *Id.* at 38. Rinard states that its scoops “are fabricated from a resilient material to allow compression against a loading dock structure.” Rinard, Abstract. Figure 2 of Rinard depicts rear transverse upper air scoop 44 and rear transverse lower air scoop 46. *Id.* at Fig. 2, *see also id.* at Figs. 10, 11, col. 10, ll. 20–50. The Board noted that Rinard explains that its air scoops, including the vertical support elements 76 within the scoops, “can be made from a resilient material.” Final Written Decision at 38 (quoting Rinard, col. 10, ll. 43–48).

Relying largely upon two declarations of WABCO’s expert, Paul A. Tres, the first dated June 29, 2018 (“First Tres Declaration”) and the second dated July 30, 2019 (“Third

Tres Declaration”),² the Board concluded that WABCO had shown by a preponderance of the evidence that the combination of Layfield and Rinard “teaches a resilient strut and resilient support and the related claimed aspects of a resilient strut and resilient support as required by independent claims 1, 11, and 17.” *Id.* at 44. “Additionally,” the Board stated, “we find that [WABCO] has demonstrated sufficiently that one of ordinary skill in the art would have had reason with rational underpinning to combine the teachings of Rinard and Layfield in the manner proposed by [WABCO] with a reasonable expectation of success.” *Id.* The Board found that, based upon the reasons and evidence set forth in WABCO’s petition and in the First Tres Declaration, as well as the Board’s determination regarding independent claims 1, 11, and 17, WABCO had shown that “the combination of Layfield and Rinard teaches or suggests the limitations of dependent claims 6, 8–10, 16, and 18.” *Id.* at 63. Finally, the Board separately found that Layfield alone taught the limitations of dependent claims 5, 7, 15, and 19. *Id.* at 51–58, 60.

II

As noted, the Board also found that WABCO had failed to demonstrate that dependent claims 2–4, 12–14, and 20 were obvious. Claims 2–4 and 12–14 are the subject of WABCO’s cross-appeal.

Dependent claim 2 claims the resilient structure of claim 1, “wherein the resilient strut defines a ‘U’ shaped section.” ’017 patent, col. 11, ll. 24–25. Similarly, dependent claim 12 claims the “resilient aerodynamic skirt assembly of claim 11, wherein the resilient support defines a ‘U’ shaped section.” *Id.* at col 12, ll. 12–13. Dependent claims

² Although one of Mr. Tres’s declarations is titled the “Third Tres Declaration,” there are only two declarations by Mr. Tres in the record. Final Written Decision at 4 n.5.

TRANSTEX INC. v. LAYDON COMPOSITES LTD.

7

3, 4, 13, and 14 relate to “resilient struts” (claims 3 and 4) and “resilient supports” (claims 13 and 14), wherein the strut or support has a “concave portion.” ’017 patent, col. 11, ll. 26–30; col. 12, ll. 14–20.

The Board construed the “U” shaped section” limitation of claims 2 and 12 as requiring a curvature. Final Written Decision at 17–18. Addressing claims 3, 4, 13, and 14, the Board construed the “concave portion” limitation in those claims as requiring “a curved or rounded inward portion.” *Id.* at 16. Based upon its construction of “U” shaped section” and “concave portion,” the Board determined that claims 2–4 and 12–14 had not been shown to be obvious over the combination of Layfield and Rinard. *Id.* at 46–47, 49–50.

DISCUSSION

I

Under 35 U.S.C. § 316(e), a petitioner in an *inter partes* review has the burden of proving a claim’s invalidity by a preponderance of the evidence. We review the Board’s factual findings for substantial evidence and its legal conclusions *de novo*. *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1281 (Fed. Cir. 2015). Thus, we review the Board’s ultimate determination of obviousness *de novo* and its underlying factual determinations for substantial evidence. *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1364 (Fed. Cir. 2015). The underlying factual findings include “findings as to the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, the presence or absence of a motivation to combine or modify with a reasonable expectation of success, and objective indicia of non-obviousness.” *Id.*

Likewise, we review the Board’s claim constructions *de novo* and any underlying factual findings for substantial evidence. *Cuozzo*, 793 F.3d at 1281. Because this *inter*

partes review stems from a petition filed before November 13, 2018, the claims are given the “broadest reasonable interpretation in light of the specification of the patent in which [they] appear[.]” 37 C.F.R. § 42.100(b) (2017); *see Game & Tech. Co. v. Wargaming Grp. Ltd.*, 942 F.3d 1343, 1351 (Fed. Cir. 2019).

II

A

We turn first to Transtex’s appeal of the Board’s decision that claims 1, 5–11, and 15–19 of the ’017 patent were unpatentable as obvious over the combination of Layfield and Rinard.³

Focusing on the “resilient strut” limitation, Transtex argues that the Board “failed to articulate” why a skilled artisan would have been motivated to combine Layfield

³ Transtex also argues that the Board’s panel of Administrative Patent Judges (“APJs”) that issued the Final Written Decision was unconstitutionally appointed. Transtex Br. 40–41 (citing *Arthrex, Inc. v. Smith & Nephew, Inc.*, 941 F.3d 1320 (Fed. Cir. 2019)). The Director of the United States Patent and Trademark Office intervened solely to address this issue. We reject Transtex’s *Arthrex* argument. Our court’s holding in *Arthrex* was expressly limited “to those cases where final written decisions were issued.” *Arthrex*, 941 F.3d at 1340. The Board’s APJs were constitutionally appointed as of the date that *Arthrex* issued, which was before the Board’s Final Written Decision in this case. *See Caterpillar Paving Prods. Inc. v. Wirtgen Am., Inc.*, 957 F.3d 1342, 1342–43 (Fed. Cir. 2020); *see also Daikin Indus. v. Chemours Co. FC*, No. 2020-1616, ___ F. App’x ___, 2021 WL 717017, at *4 n.5 (Fed. Cir. Feb. 24, 2021); *Infineum USA L.P. v. Chevron Oronite Co.*, No. 2020-1333, ___ F. App’x ___, 2021 WL 210722, at *8 (Fed. Cir. Jan. 21, 2021).

and Rinard and that it erred by providing only a citation to *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007), to support its conclusion. Transtex Br. 27–28. According to Transtex, “[t]he Board cited no evidence to explain why Rinard’s teachings relating to air scoops could have improved Layfield’s side skirts, nor why a skilled artisan would have recognized similarity in the components that would suggest some potential for improvement.” *Id.* at 29.

Second, Transtex argues that the Board “erred in concluding that the combination of Layfield and Rinard would have been likely to succeed because it failed to articulate the reasons for finding an expectation of success.” *Id.* at 33. Transtex contends that the Board improperly relied on the record of a patent related to the ’017 patent to support its finding of a reasonable expectation of success. *Id.* at 35–36.

Transtex makes two additional arguments. First, it urges that substantial evidence does not support the Board’s conclusion that Layfield’s strut was tapered. *Id.* at 36–39. Second, it contends the Board “failed to offer any meaningful analysis as to claims 6, 8–10, 16, and 18.” *Id.* at 39–40.

WABCO responds that the Board made a clear motivation-to-combine finding that was supported by key factual determinations and evidence. WABCO points to the Board’s findings (1) that Layfield teaches a flexible skirt panel; (2) that a skilled artisan would have looked to other similar types of trailer components that are also flexible in order to make further improvements to Layfield’s design; and (3) that a skilled artisan would have been motivated to modify Layfield in view of Rinard’s flexible fairings to permit the Layfield struts 58 to absorb greater impacts without having to be repaired or replaced. *See* WABCO Br. 30–33. WABCO points to the references themselves and the Tres Declarations as providing substantial evidence in support of these findings. WABCO Br. 31–40.

Next, WABCO argues that the Board provided a well-reasoned finding of a reasonable expectation of success that was supported by substantial evidence. In making this argument, WABCO points to the Board's reliance on Layfield, Rinard, and the Tres Declarations. WABCO Br. 46–47. WABCO argues that the Board correctly concluded that the combination of Layfield and Rinard is simply the “predictable use of interchangeable prior art elements according to their established functions.” *Id.* at 47 (citing Final Written Decision at 40, 43–44). WABCO contends that Transtex waived its argument that the Board should not have considered the record of the related patent. *Id.* at 47.

WABCO responds to Transtex's additional arguments by contending that Transtex waived them. Specifically, WABCO states that Transtex waived the argument that the strut of Layfield is not tapered, and indeed even took a contrary position in its Response Brief before the Board. WABCO Br. 50 (citing J.A. 1409 (“support struts 58” of Layfield are tapered to be thicker at the mounting point . . . , [such that] this ‘taper’ design actually strengthens the ‘support strut 58’)). And even if the argument was not waived, WABCO contends, Mr. Tres's declaration testimony provides substantial evidence to support the Board's finding that Layfield discloses a strut with a “shape variation.” *Id.* at 51–52 (citing First Tres Declaration ¶¶ 105–06).

Regarding claims 6, 8–10, 16, and 18, WABCO argues that Transtex did not raise before the Board, and thus waived, any arguments directed to the limitations of these claims. Regardless, WABCO urges, the Board's findings with respect to these claims are also supported by substantial evidence. WABCO Br. 53–54.

B

We see no reason to disturb the Board's decision relating to claims 1, 5–11, and 15–19. The Board's finding of a motivation to combine Layfield and Rinard was more than

an impermissible conclusory assertion. *See In re Van Os*, 844 F.3d 1359, 1361 (Fed. Cir. 2017) (citing *KSR*, 550 U.S. at 418, 421). In the Final Written Decision, the Board agreed with WABCO that “Layfield and Rinard both seek to provide fairing panels with ‘sufficient flexibility’ to bend when encountering objects.” Final Written Decision at 42 (quoting J.A. 1854–55). The Board disagreed with Transtex that “one would not consider the benefits of using the resilient materials disclosed in Layfield and Rinard to make Layfield’s struts resilient,” noting that “the advantages of resilient materials, as taught by Rinard, . . . are compelling reasons as to why one of ordinary skill in the art would have made the minor modifications proposed.” *Id.* at 41 n.22. The Board ultimately “determine[d] that Petitioner ha[d] shown that one of ordinary skill in the art would have had a reason with rational underpinning to look to other similar types of trailer components that are flexible to make further improvements to Layfield’s design.” *Id.* at 43 (citing *KSR*, 550 U.S. at 417).

Mr. Tres’s testimony provides substantial evidence that supports the Board’s finding of motivation to combine. The First Tres Declaration has a detailed section titled “Reasons for Combining Layfield and Rinard.” First Tres Declaration ¶¶ 191–98, J.A. 1008–11. In that section, Mr. Tres explained, for example:

[A] skilled artisan would have been motivated to combine Layfield and Rinard because they are directed to similar technologies and a skilled artisan would have understood the benefits of combining these two references.

. . .

[O]ne of ordinary skill would have been motivated to implement Rinard’s teachings concerning the resilient nature of the fairing element 72 and support elements 76 in the Layfield trailer fairings to provide a skirt panel that recovers its aerodynamic

configuration after moving away from that position by a substantial amount when contacting a foreign object and struts/supports that are “resilient” to accommodate such movement as recited in the challenged claims of the ’017 patent.

First Tres Declaration ¶¶ 191, 196, J.A. 1008, 1010–11.

We also disagree that the Board failed to articulate its reasons for finding an expectation of success. First, we note that our court has made clear that a relevant artisan’s expectation of success “need only be reasonable, not absolute.” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1364, 1367–68 (Fed. Cir. 2007). The Board began by rejecting Transtex’s arguments against a reasonable expectation of success, which were premised on an understanding of Layfield as having rigid and non-moving upper skirt panels. Having found Layfield’s upper skirt panels to be resilient, the Board did not give weight to Transtex’s arguments. Final Written Decision at 43–44. The Board concluded that “Petitioner ha[d] demonstrated sufficiently that one of ordinary skill in the art would have had reason with rational underpinning to combine the teachings of Rinard and Layfield in the manner proposed by [WABCO] with a reasonable expectation of success.” *Id.* at 44. In reaching this conclusion, the Board disagreed that there was no reasonable expectation of success “for the same reasons” the Board rejected Transtex’s arguments regarding motivation to combine. *Id.*

We need not address whether it was proper for the Board to rely on the record of the related patent because other substantial evidence supports the Board’s findings on a reasonable expectation of success. Specifically, Layfield itself teaches the use of resilient materials, and Rinard discloses the use of a resilient material that can be collapsed and then resume its original configuration:

The arcuate element 72, and, as appropriate, the vertical support elements 76, are fabricated from a

resilient material so that they may collapse when then rear surface 39 of the trailer 32 is brought into contact with other external structure, such as a loading dock The resilience enables the arcuate element 72 to resume its illustrated configuration upon removal of contact with such other external structure.

Rinard, col. 10, ll. 43–50. As noted, there is no requirement that there be an “absolute” expectation of success; a “reasonable” expectation is sufficient. Mr. Tres’s declarations confirm that the expectation of success here is reasonable in view of the teachings of Layfield and Rinard. *See* First Tres Declaration at ¶¶ 196–197, J.A. 1010–11; Third Tres Declaration ¶ 47, J.A. 2446.

Mr. Tres’s testimony also provides substantial evidence that supports the Board’s finding that Layfield’s strut was tapered. Final Written Decision at 34 (citing First Tres Declaration at ¶ 106, J.A. 974). We thus need not address whether WABCO waived this argument.

Likewise, without reaching whether WABCO waived its arguments directed to the limitations found in claims 6, 8–10, 16, and 18, we determine that the Board’s findings with respect to those claims are supported by substantial evidence. *Id.* at 62–63 (citing First Tres Declaration at ¶¶ 121–22 (claim 6), J.A. 981, ¶¶ 127–28 (claim 8), J.A. 983–84, ¶¶ 129–30 (claim 9), J.A. 984–85, ¶¶ 131–34 (claim 10), J.A. 985–86, ¶ 165 (claim 16), J.A. 998–99; ¶ 184 (claim 18), J.A. 1006).

III

In its cross-appeal, WABCO argues that the Board erred in construing the “U” shaped section” limitation of dependent claims 2 and 12 and the “concave” or “concave portion” limitation of claims 3, 4, 13, and 14. WABCO asserts that, under what it argues is the correct construction

of the two limitations at issue, the combination of Layfield and Rinard renders claims 2–4 and 12–14 obvious.

According to WABCO, the broadest reasonable interpretation of the term “U shaped section” encompasses “a box-shaped U.” WABCO Br. 66–67. We disagree. As the Board noted, the specification of the ’017 patent refers to a “U shaped . . . resilient strut” in reference to Figure 9B, which clearly shows a curved U shape. ’917 patent col. 10, ll. 30–31. Accordingly, we do not agree that the broadest reasonable interpretation of this claim term in light of the specification would encompass a box-shaped U.

WABCO argues that the Board erred when it construed “concave” or “a concave portion” to require “a curved or rounded inward portion.” WABCO Br. 69–70. WABCO cites to the Merriam Webster Collegiate Dictionary, 10th ed. 1994, which defines “concave” in part to be “hollowed or rounded inward like the inside of a bowl,” contending that the term “hollowed” is not limited to a curved or rounded inward structure.

Transtex responds by pointing out that the definition on which WABCO relies is the first definition of two provided by the dictionary. Transtex Resp. & Reply Br. 37. Specifically, the dictionary defines “concave” as:

1: Hollowed or rounded inward like the inside of a bowl **2:** arched in : curving in

J.A. 2451; *see* Final Written Decision at 16. Further, Transtex points out that Mr. Tres did not analyze the term “concave,” and that Transtex’s expert testified that “concave portion” “require[s] a curved surface.” Transtex Resp. & Reply Br. 37–38; Final Written Decision at 16.

We agree with the Board’s analysis. The dictionary’s use of the term “hollowed” does not “broaden[] ‘concave’ such that it does not mean curved or rounded inward.” *Id.* We thus affirm the Board’s claim constructions and its corresponding determinations that WABCO did not establish

TRANSTEX INC. v. LAYDON COMPOSITES LTD.

15

that claims 2–4 and 12–14 were obvious over the combination of Layfield and Rinard.

CONCLUSION

We have considered the parties' remaining arguments and do not find them persuasive. For the foregoing reasons, we affirm the Board's Final Written Decision.

AFFIRMED

COSTS

No costs.