NOTE: This disposition is nonprecedential.

United States Court of Appeals for the Federal Circuit

COLAS SOLUTIONS, INC.,
Appellant

v.

BLACKLIDGE EMULSIONS, INC.,
Appellee

2018-1358, 2018-1359

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in Nos. IPR2016-01031, IPR2016-01032.

Decided: March 27, 2019

ALLEN MARCEL SOKAL, Potomac, MD, argued for appellant. Also represented by KEVIN W. KIRSCH, DAVID ANGELO MANCINO, Baker & Hostetler LLP, Cincinnati, OH.

JOHN FRANCIS TRIGGS, Patterson Intellectual Property Law, PC, Nashville, TN, argued for appellee. Also represented by RYAN D. LEVY.

Before PROST, *Chief Judge,* O'MALLEY and HUGHES, *Circuit Judges.*

PROST, *Chief Judge*.

Colas Solutions, Inc. ("Colas") appeals from the final written decisions of the Patent Trial and Appeal Board ("Board") in two *inter partes* reviews. The Board determined that certain claims of U.S. Patent Nos. 7,503,724 ("the '724 patent") and 7,918,624 ("the '624 patent") are not unpatentable in view of the prior art of record. After finding Colas failed to prove its primary obviousness theory based on inherency, the Board concluded that its alternative obviousness theory was untimely. We affirm.

BACKGROUND

I

Blacklidge Emulsions, Inc. ("Blacklidge") is the assignee of the '724 and '624 patents. The patents are directed to a method of applying a specific asphalt emulsion coating, known as a "tack coat," to a road surface. *See* '724 patent col. 1 ll. 13–16; '624 patent col. 1 ll. 15–18.

The claimed invention involves a method of bonding layers of asphalt using a tack coat that exhibits certain properties. Namely, the tack coat has a relatively hard surface that resists adhering to vehicle tires yet still functions as an adhesive for subsequent layers of pavement. '724 patent col. 4 ll. 53–57; '624 patent col. 4 ll. 56–60. To attain these properties, the claims require that the tack coat has a specific range of "softening points"—i.e., the "temperature at which an asphalt composition becomes soft and flowable." '724 patent col. 2 ll. 59–60; '624 patent col. 2 ll. 61–62.

For example, claim 1 requires that the asphalt composition provides a coating with "a softening point greater than about 140° F. (60° C.)" once cured. '724 patent col. 14

ll. 16–17; '624 patent col. 14 ll. 3–4. The remaining claims require similar ranges.

II

In 2016, Colas filed Petitions for *inter partes* review, challenging the validity of the '724 and '624 patents as obvious over the prior art.[1] The Board instituted review of the challenged claims.[2]

In its Petitions, Colas relied on the Bardesi reference as teaching an asphalt that meets the "softening point" element of each claim.[3] Bardesi does not expressly disclose softening points for any of its asphalts. Instead, it discloses "pen" values. A pen value, or penetration value, "measures the distance in dmm (tenths of a millimeter) that a standard needle, under a standard loading, will penetrate a sample in a given time under known temperature conditions." '724 patent col. 2 ll. 50–53. Based on these pen values, Colas advanced the theory that Bardesi inherently disclosed the softening point limitation.

In support of its inherency theory, Colas offered the opinion of its expert, Dr. King. Dr. King opined that "asphalt having a hardness of 20-pen or below, such as the ones specifically taught by Bardesi, will necessarily have a softening point greater than about 140° F (60° C)." J.A. 201 (citing King Decl. ¶ 40).

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[1] The relevant briefing and other submissions in both actions were substantially identical. For simplicity, we cite only to the materials from the '724 patent action.

[2] The challenged claims include claims 1–12, 15–20, 23–28, and 31–33 of the '724 patent and claims 1–12, 14–23, and 25 of the '624 patent.

[3] Bardesi, O.E. & D.A. Paez, *A Novel Generation of Tack Coat Emulsions to Avoid Adhesion to Tyres*, Third World Congress on Emulsions ("Bardesi").

To reach his conclusion, Dr. King relied on a formula called the Pfeiffer equation[4] to calculate a range of potential softening points for the Bardesi asphalts. J.A. 201 (citing King Decl. ¶ 40). The equation proposes a relationship between an asphalt's (i) pen value, (ii) softening point, and (iii) penetration index ("PI").[5] *Id.*

In response, Blacklidge argued that Dr. King's calculations were flawed. Blacklidge's expert, Dr. Little, applied the Pfeiffer equation and arrived at different potential softening points. *See* J.A. 368 (citing Little Decl. ¶¶ 89–93). According to Dr. Little's results, the Bardesi asphalts may have softening points *less than* 60° C depending on their PI value. *Id.*

In its Reply, Colas conceded that "Dr. King made [a] mathematical mistake with his Pfeiffer calculations." J.A. 448. Furthermore, Colas conceded that Dr. Little's calculations were accurate. *See id.*

Despite Dr. King's error, Colas argued that "the corrected Pfeiffer relationship still shows that *most* 10/20 pen asphalts, and certainly the better quality 10/20 pen asphalts, will have the claimed softening point values above 60° C." J.A. 449 (emphasis in original). In turn, Colas raised the argument that "a prima facie case of obviousness still exists when the ranges of a claimed composition overlap the ranges disclosed in prior art." J.A. 450 (citing *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003)).

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[4] The Pfeiffer equation is as follows: $PI = (1952 - 500 \log pen - 20\,SP) / (50 \log pen - SP - 120)$. J.A. 14.

[5] According to Dr. King, PI is a measure of an asphalt's temperature susceptibility. J.A. 14 (citing King Decl. ¶ 40).

III

On November 2, 2017, the Board issued its final written decisions in both proceedings. The Board concluded Colas had not shown by a preponderance of the evidence that any of the challenged claims in either patent would have been obvious in view of the prior art.

The Board first addressed inherency. The Board emphasized that a party must "meet a high standard in order to rely on inherency to establish the existence of a claim limitation in the prior art in an obviousness analysis—the limitation at issue necessarily must be present, or the natural result of the combination of elements explicitly disclosed by the prior art."[6] *Colas Sols. Inc. v. Blacklidge Emulsions, Inc.*, No. IPR2016-01031, 2017 WL 5067597, at *9 (PTAB Nov. 2, 2017) (quoting *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1195–96 (Fed. Cir. 2014)). The Board concluded Colas's inherency theory failed because the undisputed results from the Pfeiffer equation showed that "not all 10-pen and 20-pen asphalts have a softening point greater than 60° C." *Id.*

The Board then addressed Colas's alternative theory based on overlapping ranges. The Board noted that the only "obviousness challenge in the Petition was predicated on the inherency of the softening point limitation in the asphalt of the emulsion disclosed in Bardesi. The Petition argued, consistently and exclusively, that a softening point within the claimed range was necessarily and inherently present in Bardesi's 10/20 pen asphalt." *Id.* at *8. "At the hearing, Petitioner suggested that it was abandoning the inherency theory for the softening point limitation . . . ."

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[6] The final written decision in the '624 patent action was substantially identical. *See Colas Sols., Inc. v. Blacklidge Emulsions, Inc.*, No. IPR2016-01032, 2017 WL 5067598, at *9 (P.T.A.B. Nov. 2, 2017).

Id. at *11. The Board concluded that "[t]he problem for Petitioner, however, is that inherency was the only theory presented in the Petition for why the cited combination teaches or renders obvious the softening point limitation." *Id.* Accordingly, the Board deemed the new overlapping ranges theory waived. *Id.* Finally, the Board concluded that the new theory was also unsupported by the evidence. *Id.*

As a result, the Board ruled that Colas failed to carry its burden to demonstrate that claim 1 of either patent was obvious in view of the cited references. Because Colas relied on the same evidence and argument to satisfy the "softening point" limitation for all other challenged claims, the Board determined that none of the other claims were unpatentable in view of the prior art.

Colas appealed. We have jurisdiction under 28 U.S.C. § 295(a)(4)(A).

DISCUSSION

Colas does not challenge the Board's rejection of its inherency theory. Rather, it argues that the Board erred by declining to consider its alternative obviousness theory regarding overlapping ranges. We agree with the Board that this alternative theory was waived.

I

As a threshold matter, Colas implies that the Board's decision regarding waiver should be reviewed de novo. However, "[d]ecisions related to compliance with the Board's procedures are reviewed for an abuse of discretion." *Intelligent Bio-Sys., Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367 (Fed. Cir. 2016). Therefore, "the Board's determinations that [a party] exceeded the scope of a proper reply in violation of 37 C.F.R. § 42.23(b) . . . are reviewed for an abuse of discretion." *Id.*

II

Turning to the issue of waiver, the Board did not abuse its discretion by finding Colas's overlapping ranges theory waived. It is of "the utmost importance that petitioners in the IPR proceedings adhere to the requirement that the initial petition identify 'with particularity' the 'evidence that supports the grounds for the challenge to each claim.'" *Id.* at 1369 (quoting 35 U.S.C. § 312(a)(3)). "A reply may only respond to arguments raised in the corresponding opposition or patent owner response." *Id.* (quoting 37 C.F.R. § 42.23(b)).

A detailed review of the Petition in both proceedings confirms that inherency was Colas's only theory for this disputed claim element. Colas addressed the disputed "softening point" limitation in three parts. First, it stated its theory that Bardesi "necessarily" taught the limitation. J.A. 201. Second, it described the details of the equation supporting that inherency theory. *See* J.A. 202–03 (discussing Dr. King's calculations). Assuming a certain range of PI values, Dr. King calculated a *potential* range of softening points for the asphalts in Bardesi. According to Dr. King's calculations, all potential softening point values fell within the claimed range. Third, the Petition concluded by explaining that "Dr. King was able to opine that 'asphalts of 10–20 dmm penetration from the Bardesi tack coat emulsion would necessarily have softening points meeting the claim 1 requirement of 'greater than about 60° C.'" J.A. 203 (quoting King Decl. ¶ 43).

But Colas's inherency theory was short-lived. Dr. King's mathematical mistake was highlighted in Blacklidge's Response. J.A. 368–74. As a result, Colas's Reply pressed a different theory that the claims are obvious because softening points taught in the prior art mostly overlap with the claimed range. J.A. 450.

The untimeliness of Colas's alternative theory is self-evident. Colas fails to point to a single line of its original Petition articulating this theory. Furthermore, though Colas claims to have always advanced this theory, Colas never marshalled evidence to support it. Instead, it attempted to recycle existing evidence intended for its inherency theory. The challenge for Colas all along was that Bardesi does not disclose any *actual* "softening point" values for its asphalts. To overcome this gap, Colas's advanced an inherency-based obviousness theory to show that every *potential* value for these specimens necessarily falls within the claimed range. However, it could not make that showing. Pivoting, Colas tried to argue that "most" potential values still fall within the claimed range. But the fact that some or most potential values may occur in a range does not confirm the actual softening point value for the specimen occurs within the range. It may, or it may not. On this record, the actual softening point is simply unknown.

As such, Colas's reliance on *In re Peterson* is misplaced. *In re Peterson* stands for the proposition that "[a] prima facie case of obviousness typically exists when the ranges of a claimed composition overlap the ranges *disclosed in the prior art*." 315 F.3d 1325, 1329 (Fed. Cir. 2003) (emphasis added). Here, no ranges are disclosed.[7]

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[7] Colas's reliance on case law regarding anticipation unravels for the same reason. Colas primarily relies on *Ineos USA LLC v. Berry Plastics Corp.*, arguing that if the prior art discloses a broader, overlapping range then the patent owner must establish that the specific claimed range was "critical" to the operability of the invention. Appellant's Br. 46 (quoting 783 F.3d 865, 869–70 (Fed. Cir. 2015)). But the prior art here does not actually disclose a range of softening points.

In sum, inherency was an all or nothing theory. Colas's Petition and its evidence were tailored to prove inherency. That theory failed. Colas's belated attempt to stretch that evidence to fit its alternative "overlapping ranges" theory only underscores that this theory was an afterthought raised for the first time in its Reply. Thus, the Board correctly concluded the theory was waived.[8]

III

Colas's efforts to rewrite the record to avoid this outcome are unavailing. First, Colas argues that even if it did not specifically raise an "overlapping ranges" obviousness theory in its Petition, Blacklidge opened the door to such a theory in its Response. Not so. Even a cursory review of the record shows that Blacklidge's Response simply pointed out the flaws in the underlying evidence supporting Colas's inherency theory.

Second, Colas argues that Blacklidge recognized Colas was pursuing a broad obviousness theory unrelated to inherency. Appellant's Br. 35–37. To prove this assertion, Colas points to portions of Blacklidge's Response, which at times addressed issues aside from inherency.

It is true that Blacklidge found other potential defects in Colas's invalidity case. For instance, Blacklidge pointed out that while the claims at issue recite softening points for the "cured" tack coat, Bardesi lacks any "teaching or suggestion" of such properties. *See* J.A. 350; see also J.A. 356–

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[8] On appeal, Colas refers to its "alternative" invalidity positions using different labels and formulations (e.g., "prima facie obviousness," "overlapping" ranges). *See* Appellant's Br. 2, 32, 42. It also mentions an "inherent anticipation" theory. *See id.* 46–48. However, since obviousness based on inherency was the only invalidity theory Colas advanced in the Petition, all other theories were waived regardless of how they are styled.

57 (arguing Bardesi only concerns the properties of the "base asphalt" *before* it is ever cured). In Colas's view, such arguments about what the prior art "teaches" to a person of ordinary skill are part of a more typical § 103 analysis unrelated to analyzing inherency—which examines whether the limitation is "necessarily" present in the prior art, *PAR Pharm.*, 773 F.3d at 1195–96. In turn, Colas invites us to infer that the Board and Blacklidge were keenly aware of Colas's broader theory that the claimed ranges of softening points would have been obvious to one of skill in the art.

This argument misconstrues the record. Colas overlooks clear statements in the Response that confirm that Blacklidge's understanding had always been that Colas's theory was limited to inherency. Blacklidge expressly stated that "Colas does *not* argue that a PHOSITA would have found it *obvious* to seek out asphalts with the particular softening points." J.A. 364 (emphasis added). Blacklidge maintained that Colas's lone theory was that the Bardesi asphalt "inherently possesses a softening point that meets the claim limitations." *Id.* Moreover, because Colas's lone inherency-based theory was fundamentally flawed, Blacklidge insisted that Colas should "not be permitted to introduce an entirely new obviousness rationale to fix the errors made in its Petition." J.A. 364–65. While Blacklidge did point out other flaws in the prior art reference not directly related to inherency, Blacklidge's effort to cabin Colas to its original theory is unquestionable. Under such circumstances, Blacklidge's statements do little to evidence that Colas properly preserved an alternative theory in its Petition. Indeed, had Colas adequately articulated such a theory, it would not need to rely on Blacklidge's statements. Colas should be able to point to its location in the Petition. It cannot do so.

Finally, Colas also cites to several cases regarding waiver. But its reliance on our decisions in *Intellectual Ventures I*, *Intellectual Ventures II*, and *Genzyme* is

misplaced. None of these cases involved a new theory raised for the first time in a Reply in contravention of 37 C.F.R. § 42.23(b). *See Ericsson Inc. v. Intellectual Ventures I LLC*, 901 F.3d 1374, 1381 (Fed. Cir. 2018) (finding no waiver where party "merely expand[ed] on a previously argued rationale" rather than an entirely new rationale); *Intellectual Ventures II LLC v. Ericsson Inc.*, 685 F. App'x 913, 922 (Fed. Cir. 2017) (finding no waiver where party "continued to argue, just as it had in its petition, that claim 1 would have been obvious over the combination of Li, Yamaura, Zhaung, and Beta"); *Genzyme Therapeutic Prod. Ltd. P'ship v. Biomarin Pharm. Inc.*, 825 F.3d 1360, 1366 (Fed. Cir. 2016) (finding Board's final written decision complied with Administrative Procedures Act because the patent owner had notice of "new evidence" supporting an existing obviousness theory).

By contrast, here Colas introduced a completely "new theory of invalidity" in its Reply. *Intelligent Bio-systems*, 821 F.3d at 1369. Like the petitioner in *Intelligent Bio-systems* who "relied on an entirely new rationale" for a motivation to combine, *id.* at 1370, Colas jettisoned its inherency theory and introduced a brand-new theory of "overlapping ranges" to explain why one of ordinary skill would find the disputed element taught by Bardesi.

Under such circumstances, the Board does not abuse its discretion in declining to consider such untimely theories. *See id.* at 1369–70 (refusing to consider a new theory in light of 37 C.F.R. § 42.23(b)); *see also Wasica Finance GmbH v. Continental Automotive Sys., Inc.*, 853 F.3d 1272, 1286 (Fed. Cir. 2017) ("Rather than explaining how its original petition was correct, Continental's subsequent arguments amount to an entirely new theory of prima facie obviousness absent from the petition. Shifting arguments in this fashion is foreclosed by statute, our precedent, and Board guidelines.").

CONCLUSION

We have considered Colas's other arguments and find them unpersuasive. For the foregoing reasons, we affirm the Board's final written decisions finding the challenged claims not obvious in view of the prior art.

AFFIRMED