United States Court of Appeals for the Federal Circuit

PROVISUR TECHNOLOGIES, INC.,
Appellant

v.

WEBER, INC.,
Cross-Appellant

2021-1942, 2021-1975

Appeals from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. IPR2019-01466.

Decided: September 27, 2022

SARA TONNIES HORTON, Willkie Farr & Gallagher LLP, Chicago, IL, argued for appellant. Also represented by MICHAEL BABBITT, REN-HOW HARN, CRAIG C. MARTIN.

TYLER DUTTON, Sterne Kessler Goldstein & Fox, PLLC, Washington, DC, argued for cross-appellant. Also represented by DONALD BANOWIT, RALPH WILSON POWERS, III, JON WRIGHT.

Before PROST, REYNA, and STARK, *Circuit Judges*.

PROST, *Circuit Judge*.

Weber, Inc. ("Weber") petitioned for inter partes review ("IPR") of claims 1–14 of U.S. Patent No. 6,997,089 ("the '089 patent"). In a final written decision, the Patent Trial and Appeal Board ("Board") concluded that Weber had proved unpatentable as obvious claims 1–10, 13, and 14 but not claims 11 or 12. *Weber, Inc. v. Provisur Techs., Inc.*, No. IPR2019-01466, Paper No. 36 (P.T.A.B. Mar. 8, 2021) ("*Final Written Decision*"). Patent Owner Provisur Technologies, Inc. ("Provisur") appeals the Board's unpatentability determinations. Weber cross-appeals the Board's determination that claims 11 and 12 are not unpatentable. For the reasons set forth below, we affirm in part, vacate in part, and remand.

BACKGROUND

I

The '089 patent describes a method and system for "classifying slices or a portion cut from a food product according to an optical image of the slice." '089 patent Abstract. Some types of food products, like bacon or cold cuts, are packaged and sold in groups of slices and "in accordance with a particular weight requirement." *Id.* at col. 1 ll. 13–15. Systems of conveyors and slicers create and gather these groups for packaging. The '089 patent explains that, while slicing apparatuses and conveyor systems were known in the art, it remained "desirable to provide a system which would be directly responsive to the quality of cut slices and which would provide a compact and effective arrangement to classify slices based on fat content and fat deposits." *Id.* at col. 1 ll. 26–50. To that end, the patent describes an apparatus that includes a slicing station with a blade for removing slices from a food product. *Id.* at col. 3 ll. 31–34. The slices are moved on a series of conveyors to a weigh conveyor, which weighs the slice or stack and communicates the result to a CPU. *Id.* at col. 3 ll. 35–53. An image processing system is arranged above

the weigh conveyor and "preferably includes," among other components, an "ELECTRIM EDC-1000N black and white 640x480 pixel digital camera." *Id.* at col. 3 ll. 54–64. The image processing system captures an image of the top slice of the stack while the stack passes within its field of vision. *Id.* at col. 4 ll. 20–30. Software in the image processing system or in the apparatus's CPU analyzes the image, determining perimeter or boundary dimensions and the fat-to-lean ratio of the food using pixel-by-pixel image data. *Id.* at col. 4 ll. 33–44. The system compares this data to predetermined or programmable standards and classifies the food according to its fat content or flaws. *Id.* at col. 4 ll. 56–64. The image processing system or the CPU then sends a signal to an actuator, which pivots "to deliver slices alternately to" the appropriate conveyor. *Id.* at col. 4 ll. 9–13.

Claim 1 of the '089 patent is illustrative of the issues on appeal and recites:

> 1. A method of classifying groups of slices collected in a stack after being cut from a food product, comprising the steps of:
>
> removing a plurality of slices in succession from a food product by cutting, using a high speed slicing apparatus;
>
> dropping said plurality of slices from said food product and accumulating said plurality into a stack on a conveyor system having at least one conveying surface;
>
> moving said stack on said conveying surface into an image field of a digital image receiving device;
>
> generating pixel-by-pixel image data of a top slice of said stack using the digital image receiving device;

> determining a surface area of the top slice from the data;
>
> determining a fat content of said top slice on a pixel-by-pixel basis;
>
> comparing the fat content to at least one predetermined limit; and
>
> classifying said stack according to said fat content and said limit; and
>
> depending on how said stack is classified, conveying said stack to a corresponding destination.

II

Weber's IPR petition set forth two grounds: (1) that claims 1, 3–5, 8–10, 13, and 14 were invalid as obvious over United Kingdom Patent GB 2,239,787 ("Whitehouse") in view of U.S. Patent No. 5,267,168 ("Antonissen") and U.S. Patent No. 4,016,788 ("Hardy"); and (2) that claims 2, 6, 7, 11, and 12 were invalid as obvious over Whitehouse in view of Antonissen and Hardy and further in view of U.S. Patent No. 4,136,504 ("Wyslotsky"). Weber argued that Antonissen, which discloses a camera that "may be of any known type . . . but will preferably use an asynchronous CCD [charge-coupled device] to ensure rapid capture of the frame," J.A. 658, teaches the claimed "digital image receiving device." Provisur, in its Patent Owner Response, disputed Weber's characterization and argued that Antonissen does not disclose a digital camera because its camera uses an analog-to-digital converter external to the camera's housing. Provisur also argued that Weber had failed to show how the combination of Whitehouse with Antonissen would have been able to "determine[] a surface area of the top slice" from "pixel-by-pixel image data" as required by the claims.

To address Provisur's argument that Antonissen does not disclose a digital camera, Weber submitted with its

reply several pieces of evidence about ELECTRIM cameras, including (1) an article about the ELECTRIM EDC-1000 series, (2) an Internet Archive capture of the Frequently Asked Questions page on ELECTRIM's website, and (3) a technical manual for the EDC-1000 series cameras. Weber also submitted a supplemental declaration from its expert explaining that Weber's original position that Antonissen describes a digital camera was correct because that camera works the same way as the ELECTRIM cameras do. Provisur deposed the expert and learned that Weber possessed the ELECTRIM evidence when it filed its petition. Provisur also probed the expert's knowledge of the difference between different ELECTRIM camera models, prompting Weber, on redirect, to introduce a data sheet showing various models, including the EDC-1000 and the EDC-1000N.

Provisur asked the Board to exclude Weber's ELECTRIM-related evidence, arguing that it (1) was unduly prejudicial under Rule 403 of the Federal Rules of Evidence and (2) violated the Board's rules because Weber introduced it too late. In its Final Written Decision, the Board rejected Provisur's arguments, concluding that the evidence was "highly probative of how the camera mentioned in the '089 patent operates" and that it was not untimely because it responded to Provisur's "argument that Antonissen's imaging hardware is not akin to the imaging hardware that is described in the Specification and recited in every claim in the '089 patent." *Final Written Decision*, at 31, 34. The Board also found that Provisur "had a full and fair opportunity at [Weber's expert]'s deposition to meet the evidence as reflected in the extensive cross-examination on this evidence" and to "respond[] to this evidence in its Sur-reply." *Id.* at 35.

On the petition's merits, the Board concluded that Weber had proven by a preponderance of the evidence that all of the challenged claims were unpatentable except for claims 11 and 12. *Id.* at 36. Stating its belief that Provisur

did "not dispute that [Weber] ha[d] demonstrated that the combined teachings of Whitehouse, Antonissen, and Hardy describe or suggest all limitations of claim 1 other than the 'digital image receiving device' of element 1.3," the Board confined its analysis of Ground 1 to whether Antonissen teaches the claimed "digital image receiving device." *See id.* at 13. Relying on Weber's ELECTRIM evidence, the Board concluded that it does. *Id.* at 14–16. It then rejected Provisur's motivation-to-combine arguments and concluded that Weber had shown that claims 1, 3–5, 8–10, 13, and 14 were invalid as obvious. *Id.* at 16–23. With respect to Ground 2, the Board concluded that the addition of Wyslotsky to the Whitehouse/Antonissen/Hardy combination rendered obvious claims 2, 6, and 7 because Wyslotsky discloses the concept of weighing the stack "at the same time" as the combined system generates a digital image of the stack. *Id.* at 26–28. But for claims 11 and 12, which recite a physical arrangement of a camera over a weighing conveyor, the Board concluded that Weber had failed to show that Wyslotsky discloses a scale located under a camera or to offer a "persuasive reason why an ordinarily skilled artisan would have modified the references to achieve such an arrangement." *Id.* at 28–29.

Each party appeals aspects of the decision adverse to it. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

I

We begin with Provisur's appeal, which raises two challenges. First, Provisur argues that the Board abused its discretion when it denied Provisur's motion to exclude the ELECTRIM-related evidence. Second, Provisur contends that the Board violated the Administrative Procedure Act ("APA") by failing to address all of Provisur's patentability arguments. We address each argument in turn.

A

Provisur first challenges the Board's decision denying its motion to exclude Weber's reply evidence. We review the Board's evidentiary determinations, including whether a party exceeded the scope of a proper reply, for abuse of discretion. *VidStream LLC v. Twitter, Inc.*, 981 F.3d 1060, 1064 (Fed. Cir. 2020); *Apple Inc. v. Andrea Elecs. Corp.*, 949 F.3d 697, 705 (Fed. Cir. 2020). "The Board abuses its discretion if its decision (1) is clearly unreasonable, arbitrary, or fanciful; (2) is based on an erroneous conclusion of law; (3) rests on clearly erroneous fact finding; or (4) involves a record that contains no evidence on which the Board could rationally base its decision." *ClearOne, Inc. v. Shure Acquisition Holdings, Inc.*, 35 F.4th 1345, 1351 (Fed. Cir. 2022).

The Board did not abuse its discretion. Weber's IPR petition purported to explain why the '089 patent's claims were invalid, Provisur's response argued that the prior art did not disclose a digital camera, and Weber's reply explained that the prior art used the same type of camera as the one described in the '089 patent's specification. The Board properly concluded that the reply evidence was both directly responsive to Provisur's arguments and highly probative. *Final Written Decision*, at 31, 33. Importantly, Weber's invalidity theories did not change, nor did the reply fill any holes in Weber's petition.[1] Weber's reply merely explained why Provisur was incorrect about the scope of the '089 patent's claims and reiterated how the prior art taught the same technology. Nothing in the reply violated the Board's rules or our precedent, so it was appropriate for the Board to admit the new evidence.

---

[1] Provisur contends that Weber's reply "gap-filled" the petition, but the gaps it points to are the holes it tried—and failed—to poke with its responsive arguments.

Provisur faults the Board for failing to address the fact that Weber could have included the ELECTRIM evidence in its IPR petition yet didn't. But the Board's conclusion that Weber's reply responded to Provisur's arguments obviated the need to address when Weber first possessed the evidence. By concluding that Weber's reply evidence properly rebutted Provisur's arguments, the Board necessarily also determined that Weber didn't have to submit the evidence with its petition. Provisur's argument conflates capability with obligation: Weber *could* have submitted the ELECTRIM evidence with its petition, but nothing *obligated* it to, nor does Provisur convincingly argue otherwise. The petition set forth a prima facie obviousness case, and the reply adduced evidence shedding light on the '089 patent's scope after Provisur had tried to narrow it.

Provisur also argues that Weber's late submission of the ELECTRIM evidence prejudiced it and that the evidence should have been excluded under Rule 403 of the Federal Rules of Evidence. The Board did not abuse its discretion in admitting the evidence: it is highly probative—indeed, it appears to have been dispositive—and Provisur had an opportunity to respond both by cross-examining Weber's expert and in a sur-reply to the Board. Provisur does not convince us that two days, the amount of time it had after the expert's deposition to submit its sur-reply, was insufficient time for it to respond to arguments characterizing the very technology Provisur's patent describes. Nor are we moved by Provisur's argument that 10 minutes was insufficient time to re-cross Weber's expert on the data sheet Weber introduced at the deposition; Provisur was entitled to two hours of record time for re-cross examination under 37 C.F.R. § 42.53(c), and Weber's deposition tactics, however inappropriate,[2] did not compel

---

[2] *See* J.A. 2847–48 (APJ Weatherly commenting, "[s]uffice it to say if it's not clear already, I believe [Weber]

Provisur to leave when it did. Provisur has not shown that the danger of unfair prejudice, waste of time, or confusion of the issues substantially outweighs the highly probative value of the ELECTRIM camera evidence.

We therefore affirm the Board's decision denying Provisur's motion to exclude.

B

Provisur next argues that the Board erred by failing to address Provisur's argument that Weber failed to explain how its prior-art combinations "determin[e] a surface area of the top slice from the [pixel-by-pixel image] data [of a top slice of the stack]." This element appears in claim 1, and an identical or substantially similar element appears in each of the other independent claims. Provisur refers to these claim elements as the "surface-area limitations," and we do the same.

Under the APA, the Board must fully and particularly set out the bases upon which it reached its decision. *In re Sang-Su Lee,* 277 F.3d 1338, 1342 (Fed. Cir. 2002). To permit effective appellate review, the Board's patentability analysis must be "clearly disclosed and adequately sustained." *See SEC v. Chenery Corp.*, 318 U.S. 80, 94 (1943); *In re Thrift*, 298 F.3d 1357, 1364 (Fed. Cir. 2002) (emphasizing that the Board is required to "document its reasoning on the record to allow accountability" and to facilitate "effective judicial review"); *Gechter v. Davidson*, 116 F.3d 1454, 1457 (Fed. Cir. 1997) (explaining that the Board must explain its reasoning with sufficient specificity to enable this court, "without resort to

---

should have allowed [Provisur] to contact [the Board] for a ruling on this issue [regarding the scope of the redirect examination] during the deposition. And I think that [Weber's] refusal to do so, frankly, was unreasonable and borderline embarrassing.").

speculation," to effectively evaluate an anticipation rejection). "We may affirm an agency ruling if we may reasonably discern that it followed the 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). We conclude that the Board failed to meet that standard here.

The Board never explained how the Whitehouse/Antonissen/Hardy combination teaches or suggests the surface-area limitations. Instead, the Board limited its analysis of the independent claims to the "digital image receiving device" limitation. *Final Written Decision*, at 13–19. For all other claim limitations, including the surface-area limitations, it said only that "Petitioner's argument and evidence summarized above, which we adopt as our own, persuades us that the combination of Whitehouse, Antonissen, and Hardy collectively disclose or suggest all elements of claim 1 other than the 'digital image receiving device.'" *Id.* at 13. It did this, presumably, because of its impression that Provisur had "not dispute[d] that [Weber] ha[d] demonstrated that the combined teachings of Whitehouse, Antonissen, and Hardy describe or suggest all limitations of claim 1 other than the 'digital image receiving device.'" *Id.* But that is not an accurate characterization of Provisur's arguments. In its Patent Owner Response, Provisur argued that "Weber failed to show how the purported combination would have worked to determine a 'surface area' from the 'pixel-by-pixel image data.'" J.A. 1507. Provisur then proceeded to examine the disclosures Weber had relied on as teaching that claim element and concluded that "Weber offers no explanation on how the two [references] would be combined to disclose this claim limitation." J.A. 1508. And Weber responded to that argument in its reply. *See* J.A. 2123–24. Provisur plainly argued that the prior art did not render obvious the surface-area limitation, and the Board's analysis does not explicitly address those arguments or even implicitly explain how the combined

system "determin[es] a surface area of the top slice from the [pixel-by-pixel image] data" in a way that fairly contemplates and resolves those arguments. The Board's adoption of Weber's argument and evidence, coupled with its mischaracterization of Provisur's arguments, precludes us from engaging in meaningful appellate review and, therefore, violates the APA.

While Weber does not argue that the Board explicitly addressed Provisur's surface-area-limitations argument, it does suggest that the Board's logic is reasonably discernable from the record. But it only points to the Board's summary of Whitehouse's teachings. *See* Cross-Appellant's Br. 48–49 (citing *Final Written Decision*, at 9). That the Board understood Whitehouse's disclosure does not show how the Board thought that it (or anything else) rendered obvious the surface-area limitations, even if Weber relied on some of the cited excerpts in its petition in making its surface-area-limitation arguments. Weber offers no other explanation for how the Board's logic is reasonably discernible from its analysis, nor do we perceive any: the Final Written Decision does not address the surface-area limitations at all. Accordingly, we vacate the Board's decision with respect to claims 1, 9, and 13. Because those three claims are all of the '089 patent's independent claims, we also vacate the Board's judgment as to all claims found unpatentable and remand for the limited purpose of the Board's consideration of Provisur's surface-area-limitation arguments.

II

We turn next to Weber's cross-appeal, which raises just one issue: whether the Board erred in upholding the patentability of claims 11 and 12 of the '089 patent. We review the Board's legal determinations de novo and its fact findings for substantial evidence. *ACCO Brands Corp. v. Fellowes, Inc.*, 813 F.3d 1361, 1365 (Fed. Cir. 2016). "Substantial evidence is such relevant evidence as a reasonable

mind might accept as adequate to support a conclusion." *In re Bd. of Trs. of Leland Stanford Junior Univ.*, 991 F.3d 1245, 1250 (Fed. Cir. 2021) (cleaned up).

Weber asserts two bases for overturning the Board's patentability determinations for claims 11 and 12: (1) the Board erred in construing "weigh conveyor" to mean "scale"; and (2) the Board incorrectly viewed Wyslotsky's teachings in isolation rather than in the context of Weber's asserted Whitehouse/Antonissen/Hardy/Wyslotsky combination. We do not address the claim-construction argument because we agree that the Board erred in considering Wyslotsky alone, and we conclude that this error warrants vacatur of the Board's judgment as to claims 11 and 12.

In concluding that claims 11 and 12 were patentable over the cited prior art, the Board focused its analysis on Wyslotsky's teachings. It began by agreeing with Provisur that "Wyslotsky does not disclose or render obvious . . . placing a camera above a 'weigh conveyor.'" *Final Written Decision*, at 28. It then acknowledged that Wyslotsky teaches a "photoscanning device 40 that is an alternative to a scale for weighing slices" and that "the actual weight of slices may be detected by weighing on an automated scale" before dismissing that teaching because it "fails to mention or establish where the 'automated scale' is located and wholly fails to disclose such a scale being located under photoscanning device 40." *Id.* at 28–29. It concluded that "none of the prior art marshalled by [Weber] discloses the claimed physical arrangement of the camera and weighing conveyor recited in claims 11 and 12 and [Weber] offers no persuasive reason why an ordinarily skilled artisan would have modified the references to achieve such an arrangement." *Id.* at 29. The Board's analysis is faulty for two reasons.

First, Weber's IPR petition did not rely on Wyslotsky as teaching the claimed physical arrangement of a camera over a weighing conveyor, as the Board's analysis suggests.

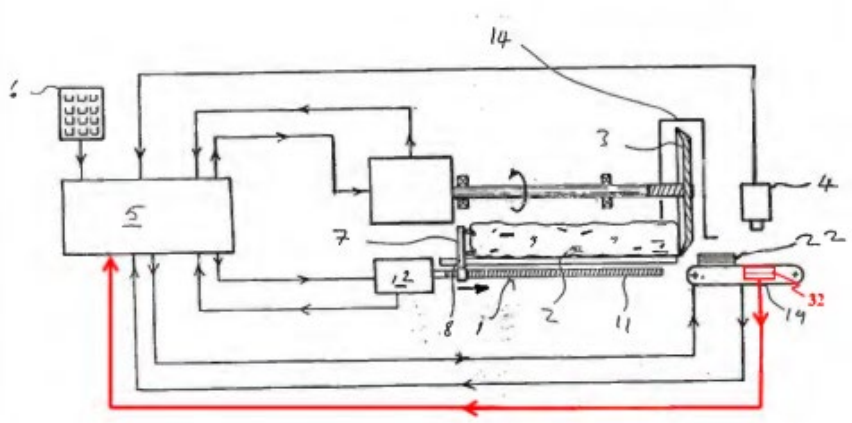
Instead, Weber relied on the physical components described in Whitehouse and Antonissen—specifically, Whitehouse's conveyors and Antonissen's digital camera—and then pointed to Wyslotsky's teachings for why a person of skill in the art would choose to position the weigh conveyor under the camera. *See* J.A. 129–130. The Board's analysis does not substantively engage with these arguments, even if we charitably read its concluding sentences referring to "the prior art marshalled by [Weber]" as referring to the entire combination rather than the single reference the Board had discussed in the immediately preceding sentences. *See Final Written Decision*, at 29. Because the Board never directly or implicitly addressed the arguments that Weber had set forth in its petition, it erred.

Second, and more importantly, the Board's findings for claims 11 and 12 are inconsistent with those it made for claims 2, 6, and 7.[3] Those latter claims require imaging and weighing food slices "at the same time." *See* '089 patent col. 6 ll. 3–5, 21–23, 31–33. Weber's IPR petition relied on Wyslotsky as teaching that concept and argued that, in the combined system, a skilled artisan would place Whitehouse's weighing cell 32 in conveyor 19 to implement that teaching in a combined Whitehouse/Antonissen system, which otherwise imaged and weighed the food slices at different times. *See* J.A. 125–26. A skilled artisan would have been motivated to take this approach, Weber argued,

---

[3] Though we have vacated the Board's judgment as to dependent claims 2, 6, and 7 (because the Board failed to consider Provisur's surface-area-limitations arguments, *see supra* Discussion Part I.B), we nonetheless address this aspect of the Board's decision because, if the Board on remand again concludes that the independent claims are unpatentable, these findings for claims 2, 6, and 7—otherwise unchallenged on appeal—would dictate concluding that claims 11 and 12 are also unpatentable.

because it would have enabled a skilled artisan to remove an entire conveyor from the system—Whitehouse conveyor 31—resulting in the system depicted below:



See J.A. 126–27. As this Weber-annotated image plainly shows, the weigh conveyor—the combination of conveyor 19 and scale 32—is situated directly below camera 4. Weber repeated these arguments when it explained why claims 11 and 12 were unpatentable. J.A. 129–30. Crucially, the Board credited them for claims 2, 6, and 7, agreeing that Wyslotsky taught the concept of weighing and imaging at the same time. *Final Written Decision*, at 27. And in rejecting Provisur's argument that Weber had failed to establish a motivation to combine, the Board noted that Weber had "persuasively respond[ed] that it identified removing a conveyor from the system as the reason motivating an ordinarily skilled artisan to have incorporated teachings relating to Wyslotsky's photoscanning device"—a result that would have been possible only if the skilled artisan had moved the weighing cell 32 from conveyor 31 to conveyor 19, as Weber had suggested. *See id.* at 27–28. Since moving the weighing cell to conveyor 19 would have resulted in precisely the arrangement that claims 11 and 12 require, the Board credited for claims 2, 6, and 7 the same arguments Weber made for claims 11 and 12. *See*

J.A. 129–130. It nonetheless upheld claims 11 and 12, and in doing so, it erred.

Provisur's counterarguments repeat the Board's mistakes. For example, Provisur contends that the Board correctly rejected Weber's arguments because Weber had failed to identify a motivation for a person of skill in the art to develop a system that includes both a camera with mass detection means and a cell that weighs slices. But, as pointed out above, Weber never relied on Wyslotsky's photoscanning device. Rather, it relied on Wyslotsky only as teaching the *concept* of weighing and imaging at the same time; it always relied on Whitehouse's and Antonissen's physical components. So the combination would not result in redundant weight-determination means, as Provisur suggests. Provisur also argues that the Board never credited Weber's argument that moving the scale would allow a skilled artisan to remove a conveyor from the system. That is plainly incorrect: the Board explicitly noted that Weber had "*persuasively* respond[ed] that it identified *removing a conveyor from the system* as the reason motivating an ordinarily skilled artisan to have incorporated teachings relating to Wyslotsky's photoscanning device." *Final Written Decision*, at 27–28 (emphasis added).

We therefore conclude that the Board erred in deciding that claims 11 and 12 are not obvious and accordingly vacate that judgment. On remand, should the Board find the independent claims obvious after considering the surface-area limitations, claims 11 and 12 are also obvious in view of the Board's determinations regarding claims 2, 6, and 7, which we do not otherwise disturb on appeal.

CONCLUSION

We have considered the parties' remaining arguments and find them unpersuasive. For the reasons set forth above, we affirm in part, vacate in part, and remand this case to the Board for the limited purpose of addressing the surface-area limitations of claims 1, 9, and 13.

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED

COSTS

No costs.