United States Court of Appeals for the Federal Circuit

SIPCO, LLC,
Appellant

v.

EMERSON ELECTRIC CO.,
Appellee

2018-1635

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2016-00095.

Decided: September 25, 2019

JAMES R. BARNEY, Finnegan, Henderson, Farabow, Garrett & Dunner, LLP, Washington, DC, argued for appellant. Also represented by KELLY LU; GREGORY J. GONSALVES, Gonsalves Law Firm, Falls Church, VA.

DOUGLAS HALLWARD-DRIEMEIER, Ropes & Gray LLP, Washington, DC, argued for appellee. Also represented by JAMES RICHARD BATCHELDER, JAMES LAWRENCE DAVIS, JR., East Palo Alto, CA.

Before O'MALLEY, REYNA, and CHEN, *Circuit Judges.*

Opinion for the court filed by *Circuit Judge* CHEN.

Opinion concurring-in-part and dissenting-in-part filed by *Circuit Judge* REYNA.

CHEN, *Circuit Judge*.

SIPCO, LLC (SIPCO) appeals a final written decision of the Patent Trial and Appeal Board (Board) in a covered business method (CBM) review of its U.S. Patent No. 8,908,842 ('842 patent). After instituting CBM review, the Board found claims 1, 7, 9, 16, and 17 of the '842 patent ineligible for patent protection under 35 U.S.C. § 101 and unpatentable for obviousness under 35 U.S.C. § 103. SIPCO appeals these findings, as well as the Board's determination that the '842 patent was subject to CBM review.

In determining that the '842 patent qualifies for CBM review, the Board found that the patent is not excluded from review under the statutory "technological invention" exception. *See* America Invents Act (AIA) § 18(d). Under 37 C.F.R. § 42.301(b), the Board must consider "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." Applying just the second part of this regulatory standard, the Board here found that the patent contained no technical solution to a technical problem.

We reverse the Board's claim construction of "low power transceiver" and its finding that the '842 patent does not satisfy the second part of the regulation defining "technological invention." § 42.301(b). Because the Board did not address the applicability of § 42.301(b)'s first part, we vacate and remand for consideration consistent with this opinion.

BACKGROUND

1. The '842 Patent

The '842 patent, based on a provisional application filed in 1997, explains that there are a variety of circumstances in which it is desirable to communicate information from a previously unconnected, remote device to a central location. '842 patent at col. 1, ll. 43–45. Rather than set up a direct communication link from the remote device to the central location, however, the invention of the '842 patent sets up a two-step communication path through a set of intermediate nodes that takes advantage of the nodes' already-provided communications link (*e.g.*, a public-switched telephone network (PSTN)) to the central location. *Id.* at claim 1. The claimed invention completes the communication path by having the remote device communicate wirelessly to an intermediate node. For example, a user may wish to replace the bank and credit cards he or she carries with a remote transmitting unit, similar to an automobile remote key, that has one or more buttons each associated with a bank or credit card. *Id.* at col. 5, ll. 9–64. When the user depresses the button, the remote transmitter transmits the user's banking card account and PIN information to, for example, the ATM. *Id.* at col. 5, ll. 43–61. The ATM then transmits the information over, for example, a PSTN to the central location for verification. *Id.* at col. 7, ll. 41–44.

In implementing this two-step system, the inventors recognized problems that arose. *Id.* at col. 5, l. 67 – col. 6, l. 11. For example, contention between two or more remote devices communicating at the same time caused more distantly located users to circumvent closer users. *Id.* at col. 6, ll. 4–7. In addition, an interloper could unlawfully intercept the electromagnetic signals carrying sensitive data. *Id.* at col. 6, ll. 7–11. To alleviate these problems, the '842 patent recites the use of a *low-power* remote transmitter, which the specification explains would require the user to

be in "close proximity," "e.g., several feet," in order for the user to be able to use it. *Id.* at col. 5, l. 67 – col. 6, l. 11.

The parties do not dispute the Board's treatment of claim 1 as representative. Claim 1 recites the following:

> 1. A device for communicating information, the device comprising:
>
> a low-power transceiver configured to wirelessly transmit a signal comprising instruction data for delivery to a network of addressable devices;
>
> an interface circuit for communicating with a central location; and
>
> a controller coupled to the interface circuit and to the low-power transceiver, the controller configured to establish a communication link between at least one device in the network of addressable devices and the central location using an address included in the signal, the communication link comprising one or more devices in the network of addressable, the controller further configured to receive one or more signals via the low-power transceiver and communicate information contained within the signals to the central location.

Id. at claim 1. Dependent claims 3 and 4 are particularly relevant to this appeal:

> 3. The device of claim 2, wherein the remote device is a [sic] associated with a vending machine.
>
> 4. The device of claim 2, wherein the remote device is associated with an Automated Teller Machine (ATM).

Id. at claims 3, 4.

2. Board's Institution Decision

In July 2016, Emerson Electric Co. (Emerson) filed a petition requesting CBM review of the '842 patent on, *inter alia*, §§ 101 and 103 grounds. Emerson argued that the challenged claims were directed to the patent-ineligible abstract idea of "establishing a communication route between two points to relay information." J.A. 215. According to Emerson, "[t]his concept has been practiced for centuries in applications such as the Postal Service, Pony Express, and telegraph, where a route is established to relay mail or other communications from one point to another." *Id.* Emerson also argued that the '842 patent was unpatentable for obviousness over U.S. Patent No. 5,157,687 (Tymes). J.A. 261.

The Board instituted on both grounds. J.A. 432. In its institution decision, the Board analyzed whether the '842 patent qualified as a "covered business method patent" under AIA § 18(d)(1), which defines the term as "a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions." The Board determined that claim 3—associating the device with a vending machine—and claim 4—associating the device with an ATM—recited apparatuses "used in the practice, administration, or management of a financial product or service" under § 18(d)(1). J.A. 387–89.

The Board then determined that the patent was not drawn to a "technological invention." The Board applied its regulation 37 C.F.R. § 42.301(b), which provides a two-part test for determining whether a patent is for a "technological invention": "whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and solves a technical problem using a technical solution." The Board explained that both

parts of the regulation must be satisfied in order to exempt the patent from CBM review. J.A. 390. Because the Board concluded that the patent did not provide a technical solution to a technical problem and therefore did not meet part two, the Board did not analyze part one. J.A. 390–92.

Citing the Patent Office's 2012 Office Patent Trial Practice Guide, the Board focused on the features of claim 1, as incorporated in dependent claims 3 and 4, and determined that they are no more than generic and known hardware elements and routine computer functions. J.A. 390–91. The Board found that "[t]he only wireless transmission required by claims 3 and 4 is a signal from a low-power transceiver," which the Board noted was well-known in the art at the time of the invention. J.A. 391. The Board stated that the problem being solved by the '842 patent was the financial problem of reducing the cost of having to dispatch service personnel to fix these machines frequently, rather than a technical problem. J.A. 392. Ultimately finding that the features from claim 1 were not drawn to a technical solution to a technical problem and, therefore, not drawn to a "technological invention," the Board determined that the '842 patent was subject to CBM review. J.A. 392–93.

The Board construed, among other terms, "low-power transceiver." J.A. 396–99. Emerson did not provide a construction in its petition; SIPCO proposed a construction that specified that the transceiver "transmits and receives signals having a limited transmission range." J.A. 397. SIPCO supported its proposed construction with citations to the patent and an exhibit showing that the FCC discusses "low-power" transceivers in a manner that limits their range to "a few meters." J.A. 397–98. The Board disagreed with SIPCO's proposed construction, finding that the term "low-power" as used in claim 1 did not necessarily require that the device transmit and receive signals only within a "limited transmission range." J.A. 398.

The Board also declined to limit the term based on the discussion of low-power transmitters found in columns five and six of the specification, because that discussion related to "*extremely* low-power transmitters" rather than "low-power transceiver[s]." J.A. 398–99. The Board dismissed the FCC document cited by SIPCO because the sentence discussing low-power transmitters described the distance between people and consumer products, not the low-power transmitters' transmission range. J.A. 399 (quoting J.A. 2791 ("At any time of day, most people are within a few meters of consumer products that use low-power, non-licensed transmitters.")). The Board ultimately agreed that the construction should "encompass" a device that "transmits and receives signals having a limited transmission range" but declined to limit its construction to that phrase. *Id.*

3. Board's Final Written Decision

The Board's final written decision reiterated its analysis with respect to whether the '842 patent was subject to CBM review. J.A. 6–20. The Board also explained that after institution, SIPCO filed a statutory disclaimer of claims 3 and 4 under 35 U.S.C. § 253 and argued that the disclaimed claims "cannot form the basis for a ruling that the '842 patent is a [CBM] patent," as the '842 patent should be "treated as though the disclaimed claims never existed," citing language found in *Guinn v. Kopf*, 96 F.3d 1419, 1422 (Fed. Cir. 1996) ("A statutory disclaimer under 35 U.S.C. § 253 has the effect of canceling the claims from the patent and the patent is viewed as though the disclaimed claims had never existed in the patent."). The Board disagreed with SIPCO, finding that the "belated post-institution disclaimer of claims 3 and 4" did not affect its conclusion that the '842 patent is subject to CBM review. J.A. 8. The Board cited a precedential Board CBM decision in which it had previously explained that "CBM patent review eligibility is determined based on the claims of the challenged patent *as they exist at the time of the*

decision whether to institute." *Id.* (citing *Facebook, Inc. v. Skky, LLC*, Case CBM2016-00091, slip op. 11 (P.T.A.B. Sept. 28, 2017) (Paper 2) (precedential)) (emphasis added by the Board). The Board also pointed out that AIA §§ 18(a)(1)(E) and 18(d)(1) use the present tenses of words "institute" and "claims," implying that a patent is subject to CBM review based on what the patent claims *at the time of the institution decision*, not some later time after institution. J.A. 8–9. The Board noted that it would not have considered claims 3 and 4 if SIPCO had timely filed a disclaimer before institution and observed that Emerson would still have had the ability to file for *inter partes* review of the '842 patent before the one-year statutory bar of 35 U.S.C. § 315(b) had SIPCO done so. J.A. 10.

With respect to the technological invention exception, the Board cited the statement in *Versata Development Group, Inc. v. SAP America, Inc.*, 793 F.3d 1306, 1327 (Fed. Cir. 2015) that "the presence of a general purpose computer to facilitate operations through uninventive steps does not change the fundamental character of an invention" to support its conclusion that "[a] claim does not include a technological feature if its elements are nothing more than general computer system components used to carry out the claimed process." J.A. 17 (internal quotation marks omitted). The Board then reiterated its determination that the features of claim 1 as incorporated in dependent claims 3 and 4 "recite no more than generic and known hardware elements and routine computer functions," and that the problem being solved, which the Board characterized as "[a]utomating service requests of vending machines and ATMs," was a financial, not technological, problem. J.A. 18–19.

The Board maintained its "low-power transceiver" construction, concluding that SIPCO was conflating "power" with "transmission range." J.A. 23. The Board also credited Emerson's expert's testimony that a change in power does not necessarily result in a change in transmission

range, because the range depends on numerous factors including the signal frequency and environment. J.A. 24–25.

The Board concluded that the challenged claims were patent-ineligible under § 101 because they were directed to the abstract concept of "establishing a communication route between two points to relay information" and did not contain any additional inventive concept. J.A. 30–45. The Board emphasized its view that the '842 patent merely automated service requests using general purpose devices such as low-power transceivers. J.A. 32. The Board noted that, "[s]ignificantly, the claims are not directed to a new type of transceiver, interface circuit, or controller to establish a communication link between a remote device and the central location,"; "[i]nstead, the claims are directed to transmitting data between locations using conventional or generic computer components." J.A. 33.

The Board also found, *inter alia*, the '842 patent obvious over Tymes. SIPCO appeals the Board's determination that the '842 patent is subject to CBM review, as well as the Board determinations as to §§ 101 and 103. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

1. "Low-Power Transceiver" Construction

We review factual determinations concerning extrinsic evidence underlying the Board's claim construction for substantial evidence and the ultimate construction *de novo*. *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1280 (Fed. Cir. 2015). To the extent the Board considered extrinsic evidence when construing the claims, we need not consider the Board's findings on that evidence because the intrinsic record is clear. *See Eidos Display, LLC v. AU Optronics Corp.*, 779 F.3d 1360, 1365 (Fed. Cir. 2015).

The Board correctly applied *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc), rather than the broadest reasonable interpretation standard, when

construing terms of this expired patent. J.A. 21; *see also In re Rambus Inc.*, 694 F.3d 42, 46 (Fed. Cir. 2012). *Phillips* explains that "[i]t is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude." 415 F.3d at 1312 (internal quotation marks omitted). "While not an absolute rule, all claim terms are presumed to have meaning in a claim." *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1119 (Fed. Cir. 2004). In *Innova*, we rejected a construction that read the term "operatively" out of the phrase "operatively connected," explaining that the construction was not correct because "the term 'operatively' [would be] unnecessary and superfluous as the patentee could have as easily used the term 'connected' alone." *Id.*

The dispute between the parties is whether "low-power" is properly read, in light of the specification, to correlate with limited transmission range. We conclude that the Board's construction in this case fails to give appropriate meaning to the term "low-power" in "low-power transceiver." "Importantly, the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which the disputed term appears, but in the context of the entire patent, including the specification." *Phillips*, 415 F.3d at 1313. The specification explains that the reason that the '842 patent contemplates a transmitter[1] having low power is "so that a user will have

---

[1] The specification explains that a transceiver contains both a transmitter and receiving circuitry, and the parties do not dispute that only the transmitter portion of the "low-power transceiver" is used in claim 1. *See* '842 patent at col. 8, ll. 7–9, claim 1. Accordingly, we find that the specification's disclosure of a "low-power transmitter" is coextensive with claim 1's recitation of "low-power transceiver."

to be in close proximity, (e.g., several feet) to the receiver 18 of an AFTM 10 in order to use the transmitter." '842 patent at col. 5, l. 67 – col. 6, l. 3. It is only if the signal transmission is limited in range that the problems of unwanted circumvention, contention, and unlawful interception of the electromagnetic signals described in column six are alleviated. *See id.* at col. 6, ll. 4–9.

We recognize here, as we did in *Phillips*, "that the distinction between using the specification to interpret the meaning of a claim and importing limitations from the specification into the claim can be a difficult one to apply in practice." *Phillips*, 415 F.3d at 1323. However, "the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms." *Id.* SIPCO's specification explicitly ties the low-power transceiver to a limited transmission distance; accordingly, a skilled artisan would understand "low-power" to mean that the transceiver operates at a power level corresponding to "limited transmission range[2]."

Emerson contends that the specification's discussion of a limited transmission range for its transmitter does not apply to the claimed "low-power transceiver" because that discussion uses the word "extremely" before low-power. But the specification is consistent with our construction, because it repeatedly ties the low-power transmitter to having a limited transmission range. *See, e.g.*, '842 patent at col. 5, l. 67 – col. 6, l. 3 ("Preferably, the transmitter 20

---

[2] The dissent states that this construction introduces ambiguities as to how much distance and how much power correspond to "limited transmission range." Dissent at 7. But the parties did not allege, and the Board did not find that the meaning of "limited transmission range," or even "low-power," was uncertain.

is an extremely low power transmitter, so that a user will have to be in close proximity, (e.g., several feet) to the receiver . . . ."); *id.* at col. 6, ll. 4–11 ("This extremely low-power operation also helps to prevent the unlawful interception of the electromagnetic signals."); *id.* at col. 14, ll. 15–21 (". . . it may be desirable to use a cellular transmitter, instead of a low-power RF transmitter . . . because the automobile may break down a relatively significant distance from the nearest pay-type telephone (e.g., location of the nearest transceiver)."). The word "extremely" specifies the *amount of distance* by which the transmission is limited—*e.g.*, "several feet." The specification's description of a cellular transmitter being capable of transmitting a further distance than a low-power transmitter reinforces this conclusion. *See id.* at col. 14, ll. 15–21.

The Board placed considerable emphasis on Dr. Geier's expert testimony that "low-power" is not necessarily coextensive with a limited transmission range. *See* J.A. 23–25. But in this case, the intrinsic evidence is sufficiently clear as to the meaning of "low-power" such that consulting extrinsic evidence is unnecessary. *See Phillips*, 415 F.3d at 1317. In any event, Dr. Geier's testimony was less than conclusive, and both he and Emerson's other expert, Dr. Heppe, testified that one (according to Dr. Heppe, "typical") characteristic of a low-power transmitter is a limited transmission range, and that characteristic is consistent with the only described use in the specification. *See* J.A. 2937–38 (Dr. Geier); J.A. 3152–53 (Dr. Heppe). Moreover, the record also contains evidence that supports a relationship between limited transmission range and low transmit power. *See* J.A. 3046 (disclosing the Friis equation, which defines transmission distance as a function of the square root of transmitted power); J.A. 3149-50 (Dr. Heppe testifying that "signal level, generally speaking, decays as one over the square distance").

Accordingly, we reverse the Board's construction of "low-power transceiver" and construe it to mean "a device

that transmits and receives signals at a power level corresponding to limited transmission range."

2. Financial Product or Service

"[W]e review the Board's reasoning [as to whether the particular patents at issue are CBM patents] under the arbitrary and capricious standard and its factual determinations under the substantial evidence standard." *SightSound Techs., LLC v. Apple Inc.*, 809 F.3d 1307, 1315 (Fed. Cir. 2015). The parties do not dispute that only one claim must meet the requirements of § 18(d)(1) in order for the patent to be considered a CBM patent. *See Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1239 n.6 (Fed. Cir. 2016).

We find that the Board's conclusion that claims 3 and 4 recite an apparatus "for performing data processing or other operations used in the practice, administration, or management of a financial product or service" under AIA § 18(d)(1) was not arbitrary and capricious. We have previously interpreted "the definition of 'covered business method patent' [not to be] limited to products and services of only the financial industry, or to patents owned by or directly affecting the activities of financial institutions such as banks and brokerage houses." *Versata*, 793 F.3d at 1325. Rather, we have found that § 18(d)(1) "on its face covers a wide range of finance-related activities." *Id.* In *Versata*, we found the "method and apparatus for pricing products in multi-level product and organizational groups" to be sufficiently "used in the practice, administration, or management of a financial product or service" to subject the patent to CBM review. *Id.* at 1311, 1325–26.

We placed some limitation on the scope of CBM review in *Unwired Planet, LLC v. Google Inc.*, 841 F.3d 1376 (Fed. Cir. 2016), where the Board had found a patent relating to a "method and system for managing location information for wireless communications devices" to be subject to CBM review because, in the Board's view, "the [recited] 'client application' may be associated with a service provider or a

goods provider, such as a hotel, restaurant, or store" and therefore the patent was "incidental to" or "complementary to" the financial activity of service or product sales. *Id.* at 1378–79. We held that the Board's reliance on activities merely "incidental to" or "complementary to" a financial activity rendered meaningless the limits placed by Congress on CBM review. *Id.* at 1382. For example, "[t]he patent for a novel lightbulb that is found to work particularly well in bank vaults does not become a CBM patent because of its incidental or complementary use in banks." *Id.* "Likewise, it cannot be the case that a patent covering a method and corresponding apparatuses becomes a CBM patent because its practice could involve a potential sale of a good or service[, because] [a]ll patents, at some level, relate to potential sale of a good or service." *Id.* Nor is a patent for "digging ditches" subject to CBM review simply because the dirt can subsequently be sold. *Id.*

SIPCO likens its '842 patent to the examples provided in *Unwired Planet*, arguing that the claimed device is only "associated with" an ATM or vending machine and the "mere possibility that certain remote devices of the '842 patent could communicate financial data is not nearly sufficient to demonstrate that it is directed to financial products or services." SIPCO's Op. Br. 59. But the claimed apparatus need only be "used in" the practice, administration, or management of a financial product or service. *See* AIA § 18(d). As the Board explained, claims 3 and 4 recite the remote device being associated with an ATM or vending machine. '842 patent at claims 3, 4. The patent expressly contemplates that the information communicated through the claimed system is financial information that identifies the user's bank account and the user's identity. *See, e.g.*, *id.* at col. 5, ll. 40–64, col. 6, ll. 13–16. The Board is correct in its assessment that the concept of communicating financial information from a device associated with an ATM to a central location is "central to the operation of the claimed device" in claim 3. *See* J.A. 14–15 (citing '842 patent at col.

1, ll. 43–65, col. 2, ll. 23–25, col. 3, ll. 12–14, col. 3, ll. 22–23, col. 4, ll. 32–37, col. 6, ll. 19–28, FIGs. 1A, 5). We therefore do not find that the Board abused its discretion when it determined that the claimed apparatus was "used in" the practice, administration, or management of a financial product or service.

SIPCO also argued before the Board and on appeal that because it disclaimed claims 3 and 4 the Board should not have relied on them in analyzing whether the '842 patent is CBM eligible. SIPCO's Op. Br. at 62. But SIPCO ultimately conceded at oral argument that a patent may be CBM eligible based on a single claim and that the Board could have properly relied on claims 3 or 4. Oral Arg. at 2:02–09, 5:24–51, http://oralarguments.cafc.uscourts.gov/default.aspx?fl=2018-1635.mp3.

Accordingly, the Board's conclusion that the '842 patent could be CBM eligible because claims 3 and 4 recite an apparatus "for performing data processing or other operations used in the practice, administration, or management of a financial product or service" under § 18(d)(1) is not arbitrary and capricious.

3. Technological Invention Exception

We review the Board's reasoning as to whether the '842 patent qualifies as a "technological invention" under § 18(d)(1) under the arbitrary and capricious standard and its factual determinations for substantial evidence. *SightSound*, 809 F.3d at 1315. Section 18(d)(1) excludes "patents for technological inventions" from CBM review. We previously explained in *Versata* that, "[u]nhelpfully, Congress did not . . . define a 'technological invention,' but instead instructed the USPTO to 'issue regulations for determining whether a patent is for a technological invention,'" in order to assist in implementing CBM review. *Versata*, 793 F.3d at 1323 (quoting § 18(d)(2)); *see id.* The Patent Office, in turn, issued 37 C.F.R. § 42.301, which defines "technological invention" in the following way:

> In determining whether a patent is for a technological invention solely for purposes of the Transitional Program for Covered Business Methods (section 42.301(a)), the following will be considered on a case-by-case basis: [1] whether the claimed subject matter as a whole recites a technological feature that is novel and unobvious over the prior art; and [2] solves a technical problem using a technical solution.

§ 42.301(b).

If each part of this definition is satisfied, then the patent is not eligible for CBM review. We discuss each part with respect to the '842 patent below.

a. Part Two

Because the Board misread and mischaracterized the features of claim 1 in its analysis of dependent claims 3 and 4, it did not appreciate that the claims provide a technical solution to a technical problem. Its ruling on this issue was thus arbitrary and capricious.

We explained in *Versata* that § 42.301's "[d]efini[tion of] a term in terms of itself does not seem to offer much help." 793 F.3d at 1326. In fact, "neither the statute's punt to the USPTO nor the agency's lateral of the ball offer anything very useful in understanding the meaning of the term 'technological invention.'" *Id.* In *Versata*, we determined that a method of determining a price that could be achieved "in any type of computer system or programming or processing environment," and using "no specific, unconventional software, computer equipment, tools or processing capabilities" did not recite a technical solution to a technical problem. *Id.* at 1327. Citing *Alice Corp. Pty. Ltd. v. CLS Bank International*, 573 U.S. 208 (2014), we stated that "the presence of a general purpose computer to facilitate operations through uninventive steps does not change

the fundamental character of [the] invention." *Versata*, 793 F.3d at 1327.

In *Apple*, we found a Board decision not to be arbitrary and capricious where it determined that a method of generating a second menu from categories and items selected from a first menu did not provide a technical solution to a technical problem. 842 F.3d at 1234, 1239–40. The patent owner had argued that the patent was intended to solve "a problem in restaurant ordering when customers wanted something unusual and unanticipated." *Id.* at 1239. The Board found this to be more of a business problem than a technical problem. *Id.*

In *Trading Technologies*, we found a Board decision not to be arbitrary and capricious where it determined that a software method for financial trading, including receiving bid and offer information and displaying the information to the user, did not provide a technical solution to a technical problem. *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1084, 1091 (Fed. Cir. 2019) (*Trading Techs. I*); *Trading Techs. Int'l, Inc. v. IBG LLC*, 921 F.3d 1378, 1383 (Fed. Cir. 2019) (*Trading Techs. II*). The patent owner argued that the patent addressed technical problems relating to efficiency, speed, usability, intuitiveness, and visualization of prior art graphical user interface tools. *Trading Techs. I* at 1089; *see also Trading Techs. II* at 1383. We agreed that the claims related to the practice of a financial product—helping a trader gain a market advantage—rather than a technological invention. *Trading Techs. I* at 1089–90; *Trading Techs. II* at 1383. Because the "invention ma[de] the *trader* faster and more efficient, not the computer," it was not a technical solution to a technical problem. *Trading Techs. I* at 1090 (emphasis in original); *see also Trading Techs. II* at 1383.

The question of whether a patent is for a "technological invention" is fact-specific and must be considered on a case-by-case basis. *See* § 42.301(b). This case differs from those

we have previously analyzed because the problem solved by the claims is technical in nature. The Board limited its characterization of the "problem" being solved to an example problem provided in the background that is resolved by the claims—automating machine service requests. *See* J.A. 19. But it is clear from both the claims and the specification that the claimed invention implements a communication system that connects an unconnected, remote device with a central station. *See* SIPCO's Reply Br. at 22. The claims do so by taking advantage of a set of intermediate nodes ("a network of addressable devices") that are already connected to the central station over an existing communication network, for example PSTN. '842 patent at claim 1. The first step of the communication path from the user and remote device to the intermediate node is made over a wireless connection, and the second step is from the intermediate node to the central station over the existing communication network. *Id.*

In the context of leveraging an existing communications network to serve as an intermediary for communication between a remote device and a central location, however, the '842 patent explains that certain problems arise in communicating information at this first step, *e.g.*, unlawful interference, contention, and unwanted circumvention of the electromagnetic signals. *Id.* at col. 5, l. 65 – col. 6, l. 11. Accordingly, the technical problem resolved by the claims was how to extend the reach of an existing communication system from a central location to a remote, unconnected device while protecting against unwanted interference with the transmitted signals. The claims solve this problem with a technical solution: the creation of a two-step communication system that communicates information through a low-power, *i.e.*, limited transmission range, transceiver over a first, wireless step, that taps into

the intermediate node's existing network connection to transport information to the central location.[3]

Emerson maintains that even if the '842 patent solves this technical problem, it does so with conventional components. But in that sense, this case is similar to *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016), which arose in a different context and answered a different legal question but remains instructive here. In *Bascom*, prior art systems either located the Internet content filter at the user's computer and were customizable to the user but easily thwarted by computer-savvy teenagers or employees, or located the filter at

---

[3] Our decision in *Chamberlain Group, Inc. v. Techtronic Industries Co.*, Nos. 18-2103, 18-2228, 2019 WL 3938278, --- F.3d --- (Fed. Cir. Aug. 21, 2019) is not to the contrary. In *Chamberlain*, we determined that claims reciting wireless communication of status information about a movable barrier operator (*e.g.*, garage door opener) were directed to an abstract idea of communicating information wirelessly, and that the mere limitation of that abstract idea to the field of movable barrier operators did not constitute an inventive concept sufficient to transform the abstract idea into a practical application of the idea under *Alice*. *Id.* at *2–5. Unlike in *Chamberlain*, SIPCO's claimed invention does not simply use "well understood," off-the-shelf wireless technology for its intended purpose of communicating information. *See id.*, at *4–5. Instead, SIPCO's claim 1 provides a more specific implementation of a communication scheme through its two-step communication path that combines an established communications network with a short-range wireless connection between a low-power transceiver and an intermediate node on the established network. SIPCO's two-step solution extends the reach of the existing network while overcoming problems of interference, contention, and interception.

a remote server that could not be customizable to the user. *Id.* at 1343–45. The claimed invention took advantage of the technical capability of the TCP/IP communication network and moved the filter to a server operated by the Internet Service Provider (ISP). *Id.* at 1344. Because the ISP could associate an individual user with a specific request to access a website, the claimed invention was able to provide individual-customizable Internet content filtering remotely, preventing it from being easily circumvented by its users. *Id.* at 1344–45. We determined that the claims were drawn to the abstract idea of Internet content filtering under step one of *Alice*'s § 101 analysis, but determined that nothing in the record refuted Bascom's argument that the claims were drawn to an inventive concept because they recited a "technology-based solution (not an abstract-idea-based solution implemented with generic technical components in a conventional way) to filter content on the Internet that overcomes existing problems with other Internet filtering systems." *Id.* at 1351. "By taking a prior art filter solution (one-size-fits-all filter at the ISP server) and making it more dynamic and efficient (providing individualized filtering at the ISP server), the claimed invention represents a 'software-based invention[ ] that improve[s] the performance of the computer system itself.'" *Id.* "The claims [thus] carve out a specific location for the filtering system (a remote ISP server) and require the filtering system to give users the ability to customize filtering for their individual network accounts." *Id.* at 1352. We determined this to be the case despite the fact that each piece of technology Bascom employed in its invention, *e.g.*, a computer, a server, was conventional in nature. *Id.*

By implementing a two-step communication path that takes advantage of both a wireless step from a remote device to a set of intermediate nodes and another step that may be, for example, over PSTN from the intermediate nodes to the central location, and also incorporating the use of a low-power transceiver to overcome the technical

problems of interference, interception, and contention of electromagnetic signals sent over the first, wireless step, SIPCO's invention is drawn to a technology-based solution, just as Bascom's was. Because SIPCO's claims combine certain communication elements in a particular way to address a specific technical problem with a specific technical solution, we reverse the Board's finding that the patent does not satisfy the second part of its "technological invention" regulation.

b. Part One

The Board did not analyze whether the '842 patent satisfies the first part of § 42.301(b) because it found that the patent did not satisfy the second part. Emerson concedes as much. Oral Arg. at 31:14–20. Rather than address this issue in the first instance on appeal, the Board should address the first part of § 42.301(b) under the proper construction. *Robertson v. Timmermans*, 603 F.3d 1309, 1313 (Fed. Cir. 2010) ("[W]e think the better course is to give the Board the opportunity to apply the correct law rather than decide these issues ourselves in the first instance.").

Emerson argues that remand is unnecessary because the Board already analyzed whether the '842 patent was obvious under § 103. But we have previously questioned whether it makes sense to interpret the first part of § 42.301(b)—which references the word obvious—as coextensive with § 103. Most notably, in *Versata*, we observed that "[a]t this early stage of the process, when the USPTO is first determining whether the patent at issue is even a CBM, there would seem to be little cause to determine what will be one of the ultimate questions if review is granted—did the USPTO err in the first instance when it originally determined that the invention was novel and nonobvious?" 793 F.3d at 1326. We therefore decline to assume that this is how the Board would apply § 42.301(b) in this case. Instead, on remand the Board should explain

what part one of the regulation means and then apply it as so explicated.[4]

CONCLUSION

For the reasons stated above, we reverse the Board's construction of "low-power transceiver," affirm the Board's finding that claims of the patent are "used in . . . a financial product or service" under AIA § 18(d)(1), and reverse the Board's finding that the patent does not "solve[] a technical problem using a technical solution" under its regulation § 42.301(b). Because part two of § 42.301(b) is satisfied, we remand to the Board for consideration of part one consistent with this opinion. Because the Board on remand must revisit its decision as to whether the '842 patent qualifies for the CBM review, we vacate all of the Board's unpatentability determinations. We have considered the parties' remaining arguments and find them unpersuasive.

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

No costs.

---

[4] The parties agree that the AIA does not define what is or is not a technological invention. *See, e.g.*, Oral Arg. at 9:10-9:39, 16:45–52 ("Q: Does the statute provide any guidance as to what a technological invention is? A: Well, no your Honor."); *see also* AIA § 18(d). The omission of any definition for the phrase "technological invention" underscores the importance of meaningful guidance from the Patent Office on § 42.301(b). *See Kisor v. Wilkie*, 139 S. Ct. 2400, 2417 n.5 (2019) (emphasizing that regulations which "parrot[] the statutory text" rather than putting the public on notice of an agency's interpretation in advance are not entitled to deference).

United States Court of Appeals for the Federal Circuit

SIPCO, LLC,
Appellant

v.

EMERSON ELECTRIC CO.,
Appellee

2018-1635

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. CBM2016-00095.

REYNA, *Circuit Judge*, concurring-in-part and dissenting-in-part.

I respectfully dissent from the majority's decision that rejects the Board's claim construction in favor of its own construction. The record is clear in two respects. First, the majority reaches its own construction by improperly reading a functional limitation into the claim from a preferred embodiment. Second, the Board's construction rests on factual findings that are supported by substantial evidence, including expert testimony on the meaning of the claim term "low-power transceiver" to a person of ordinary skill in the art. In the end, the majority does not explain why the Board's construction is so "clearly at odds with the claim construction mandated by" the intrinsic record that

the extrinsic evidence on which the Board relied can be discounted entirely. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1318 (Fed. Cir. 2005). The majority explains only that it prefers a different construction. Because the majority's opinion is contrary to basic tenants of claim construction set forth in *Phillips*, and the deference owed to underlying factual findings under *Teva*, I respectfully dissent.

I.

To be sure, the parties disputed before the Board the construction of the term "low-power transceiver." SIPCO argued that "low-power transceiver" should be construed as a "transceiver that transmits and receives signals having a limited transmission range." J.A. 22, 485. Emerson argued that the plain and ordinary meaning of "low-power" should apply: "a transceiver that consumes less power, *e.g.*, by transmitting and receiving low power signals." J.A. 23, 588. Emerson further argued that SIPCO's construction impermissibly imports a "limited transmission range" limitation into the claims. J.A. 23, 588. Neither party proposed the construction now adopted by the majority.

The Board addressed point-by-point the same arguments that SIPCO advances on appeal. The Board ultimately rejected SIPCO's proposed construction, finding that SIPCO's arguments conflated "power" with "transmission range." J.A. 23. For example, the Board considered SIPCO's reliance on a Federal Communications Commission bulletin purportedly defining low-power transmitters as having a range of only a few meters but found that the bulletin did not support SIPCO's argument after examining that evidence. J.A. 26.

The Board adopted the plain and ordinary meaning of "low-power" and construed "low-power transceiver" as referring to a transceiver that consumes less power. *Id.* This construction, the Board concluded, encompasses a device

that transmits and receives signals having a limited transmission range, but is not limited by that feature. J.A. 26. The record evidence supports the Board's construction.

Notably, the Board received evidence and weighed the testimony and credibility of SIPCO's and Emerson's experts. The Board credited the testimony of Emerson's expert, James T. Geier, in making its factual finding that a person of ordinary skill in the art would have understood that changing the transmission power does not necessarily change the transmission range. J.A. 23 (citing J.A. 2655–58 ¶¶ 34–39 (Geier Rebuttal Decl.)); *see also* J.A. 25 (explaining that Mr. Geier's cross-examination testimony was consistent with his declaration testimony on the fact that "changing the 'power' does not necessarily change the 'transmission range,' which depends [*sic*] numerous factors, including the signal frequency and environment").

The majority rejects the plain and ordinary meaning of "low-power transceiver" and reverses the Board, construing the term to mean "a device that transmits and receives signals at a power level corresponding to limited transmission range." Maj. Op. 12–13. The majority concludes that the meaning of "low-power" is sufficiently clear in the intrinsic record to make evaluation of the extrinsic evidence unnecessary. Maj. Op. 12. According to the majority, the specification explains that the reason for using low-power transmitters is so the user must be in close proximity to the receiver to avoid the problems of unwanted circumvention and unlawful interception of the signals. Maj. Op. 10–11. The majority thus concludes that the "specification explicitly ties the low power transceiver to a limited transmission distance," and that a person of ordinary skill in the art would understand "'low-power' to mean 'having a limited transmission range.'" Maj. Op. 11. The majority goes on to further conclude that the term "extremely" in the phrase "extremely low-power" refers to the "*amount of distance* by which the transmission is limited—*e.g.,* 'several feet.'" Maj. Op. 12. (emphases in original). And despite finding

that the intrinsic evidence is so clear that it does not need to consider the Board's factual findings, the majority proceeds to reweigh the extrinsic evidence and make its own factual findings, contrary to the Board's. Maj. Op. 12. The majority's newly proffered construction is contrary to well-established claim construction precedent.

II.

The majority errs in two ways: (1) by importing a limitation—transmission range—into the claims from a preferred embodiment; and (2) by disregarding the Board's factual findings without a sufficiently clear intrinsic record.

First, the majority reaches its own construction of "low-power transceiver" by relying on limitations that are not in the claims. We have long held that "even though 'claims must be read in light of the specification of which they are a part, it is improper to read limitations from the written description into a claim.'" *Bradium Techs. LLC v. Iancu*, 923 F.3d 1032, 1049 (Fed. Cir. 2019) (quoting *Wenger Mfg., Inc. v. Coating Mach. Sys., Inc.*, 239 F.3d 1225, 1237 (Fed. Cir. 2001)); *see also Silicon Graphics, Inc. v. ATI Techs., Inc.*, 607 F.3d 784, 792 (Fed. Cir. 2010) ("A construing court's reliance on the specification must not go so far as to import limitations into claims from examples or embodiments appearing only in a patent's written description [] unless the specification makes clear that the patentee intends for the claims and the embodiments in the specification to be strictly coextensive." (internal quotations omitted)).

As the majority recognizes, we have noted the difficulty in drawing a "fine line between construing the claims in light of the specification and improperly importing a limitation from the specification into the claims." *Cont'l Circuits LLC v. Intel Corp.*, 915 F.3d 788, 797 (Fed. Cir. 2019) (quoting *Retractable Techs., Inc. v. Becton, Dickinson & Co.*, 653 F.3d 1296, 1305 (Fed. Cir. 2011)). Nevertheless,

"the line between construing terms and importing limitations can be discerned with reasonable certainty and predictability if the court's focus remains on understanding how a person of ordinary skill in the art would understand the claim terms." *Phillips*, 415 F.3d at 1323.

The majority here loses that focus, crosses that line, and, commits "one of the cardinal sins of patent law—reading a limitation from the written description into the claims." *Id.* at 1320 (quoting *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1340 (Fed. Cir. 2001)); *see also id.* at 1321 ("[W]e have expressly rejected the contention that if a patent describes only a single embodiment, the claims of the patent must be construed as being limited to that embodiment.").

The majority's construction ("a device that transmits and receives signals at a power level corresponding to limited transmission range") replaces the ordinary meaning of the "power" limitation in the claim language and instead ascribes a functional limitation to "low-power transceiver" in terms of transmission range, such that a low power transceiver that transmits more than two feet—for example, two and a half feet—is excluded. *See* Maj. Op. 10–12. To reach this conclusion, the majority relies primarily on a single passage in the written description describing a single preferred embodiment depicted in Figure 1. As to this embodiment, and in relevant part, the written description states:

> In use, a user would simply depress a transmit button 22, which would result in the transmitter 20 transmitting an electromagnetic signal 30 to a remote AFTM 10[.] *Preferably*, the transmitter 20 is an *extremely low power transmitter*, so that a user will have to be in close proximity, (e.g., several feet) to the receiver 18 of an AFTM 10 in order to use the transmitter. This would help alleviate problems which may otherwise occur if a user approaching

> an AFTM 10 is circumvented by a second, more distantly located user who depresses his transmit button. This *extremely* low-power operation also helps to prevent the unlawful interception of the electromagnetic signals[.] In addition, *in an alternative embodiment, the transmitted signal may be encrypted for further protect* [*sic*] *against such unlawful interception.*

'842 patent col. 5 l. 65–col. 6 l. 11 (emphases added).

This is the critical passage from which the majority concludes that the written description links "low-power" to having a "limited transmission range" limitation. *See* Maj. Op. 11–12. According to the majority, "[i]t is only if the signal transmission is limited in range that the problems of unwanted circumvention, contention, and unlawful interception of the electromagnetic signals . . . are alleviated." Maj. Op. 11. But this is not correct because the specification recognizes that transmission need not be extremely low-power if the transmission signal is encrypted. Thus, based on a single "preferred" embodiment, the majority limits the entire claim based on transmission range and thereby alters the scope of the patent.[1]

The majority's construction alters the scope by removing the "low power" limitation from the claim language and

---

[1] The majority overlooks other embodiments in the specification. Another embodiment is a vending machine whereby the machine sends a signal to itself that is then relayed to the central location that it, for example, is low on or out of potato chips. *See* '842 patent col. 7 l. 61–col. 9 l. 3. The majority fails to explain why, in this embodiment, close proximity to the receiver is necessary to avoid unwanted circumvention or unlawful interception of the potato chip notification.

replacing it with a relationship between power and transmission range extrapolated from a preferred embodiment. In doing so, it introduces at least three ambiguities.

First, the specification does not clearly define a relationship between power and transmission range. While the specification describes an embodiment that relates "extremely low power" to the requirement that a user be in close proximity, "e.g., several feet," of the receiver, the specification is silent on how a person of ordinary skill in the art would understand "limited transmission range" and power level. If, as the majority contends, "extremely" specifies the "amount of distance," it is unclear how to objectively determine the distance required by "limited transmission range" in the majority's construction where "extremely" is absent and "several feet" is the sole example given for transmission range. *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1373 (Fed. Cir. 2014) (declining to "cull out a single 'e.g.' phrase from a lengthy written description to serve as the exclusive definition of a facially subjective claim term" and holding that claim term to be indefinite). Second, the relationship between power and "limited transmission range" introduced by the majority's construction is not defined by the specification and is ambiguous because it allows for inverse relationships or a relationship impacted by other factors—so long as "power" and "limited transmission range" correspond in some way. In other words, there is nothing to tell a person of ordinary skill in the art a numerical value for the transmission range that would result from a "corresponding" numerical value for power level. Third, the majority's construction does not specify whether the device is limited in the transmission range of signals it transmits, or whether the device also has limits on the transmission range of signals it can receive. A construction that introduces such ambiguities cannot be correct.

Here, the patentee chose to define the subject matter of his invention in terms of "power," and our law gives him

the freedom to do so. *See Thorner v. Sony Computer Entm't Am. LLC*, 669 F.3d 1362, 1367 (Fed. Cir. 2012) ("The patentee is free to choose a broad term and expect to obtain the full scope of its plain and ordinary meaning unless the patentee explicitly redefines the term or disavows its full scope."). This is not a case where the patentee has acted as his own lexicographer to ascribe a special meaning to "low-power." Indeed, the patentee carefully stated the intent *not* to limit the claims by making them strictly coextensive with descriptions of embodiments and instead sought to "cover all alternatives, modifications, and equivalents" of the claimed invention. '842 patent col. 4 ll. 19–26; *see also id.* col. 14 ll. 6–9. I therefore disagree with the majority's importation of results-oriented, functional language from a preferred embodiment and rewriting of the claim.

The Board correctly pointed out that none of the claims contain functional language. J.A. 25. And "[w]here the function is not recited in the claim itself by the patentee, we do not import such a limitation." *Ecolab, Inc. v. Envirochem, Inc.*, 264 F.3d 1358, 1367 (Fed. Cir. 2001). Limited range is not claimed as a part of the invention, and neither is the function of preventing unlawful interception of electromagnetic signals.

Second, the Board's factual findings are supported by substantial evidence and require our deference. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841–42 (2015). How a person of ordinary skill in the art would understand "low-power transceiver" was an issue of disputed fact between the parties and their experts that the Board properly resolved in construing the term according to its plain and ordinary meaning based on the evidence presented. *See id.* at 840 ("[C]laim construction has evidentiary underpinnings and . . . courts construing patent claims must sometimes make credibility judgments about witnesses." (internal quotations removed)). As the Board found, "low-power" is not a complex term; it has a well-understood plain meaning. In the context of transmitters, it

is a transmitter that consumes less power. *See* J.A. 23. By extension, the Board relied on extrinsic evidence that the term "low-power transceiver" is well known in the art and carries an ordinary meaning of a "transceiver that consumes less power." *Id.*

The Board recognized that the use of low-power transceivers *can* impact transmission range, but it credited the testimony of Dr. Geier that the meaning of "low-power transceiver" is not limited by this feature. Dr. Geier testified that while you *could* have less range with lower-power transmitters, the transmission range depended on numerous other factors, such as signal frequency, environment, and sensor sensitivity. Dr. Geier testified that transmission power does not necessarily result in a change of the transmission range. The majority rejects Dr. Geier's testimony by reweighing the evidence and making its own factual finding that his testimony was "less than conclusive." Maj. Op. 12. But whether "power" necessarily affects transmission range is a subsidiary issue of fact resolved by the Board that requires our deference. *See Knowles Elecs. LLC v. Cirrus Logic, Inc.*, 883 F.3d 1358, 1362 (Fed. Cir. 2018) (noting that we review the Board's underlying factual findings based on extrinsic evidence, such as expert testimony, for substantial evidence).

Despite reweighing the extrinsic evidence itself, the majority asserts that the intrinsic record is so clear that the Board's reliance on Emerson's expert testimony should be dismissed. Maj Op. 9, 12 (citing *Eidos Display, LLC v. AU Optronics Corp.*, 779 F.3d 1360, 1365 (Fed. Cir. 2015) ("To the extent the district court considered extrinsic evidence in its claim construction order or summary judgment order, that evidence is ultimately immaterial to the outcome because the intrinsic record is clear.")). It is also true that we have held that we may affirm a Board decision that is supported on the intrinsic record alone. *See Profectus Tech. LLC v. Huawei Techs. Co.*, 823 F.3d 1375, 1381 (Fed. Cir. 2016) (citing *Cambrian Sci. Corp. v. Cox Commc'ns,*

Inc., 617 F. App'x 989, 993 (Fed. Cir. 2015) (affirming claim construction without addressing extrinsic evidence because "the intrinsic evidence fully determines the proper construction of the contested claim term")). Further, "[e]xtrinsic evidence may not be used 'to contradict claim meaning that is unambiguous in light of the intrinsic evidence.'" *Id.* (citing *Phillips*, 415 F.3d at 1324). But here, the intrinsic record is not so clear. The term "low-power transceiver" as used in the patent is susceptible to more than one reasonable interpretation, the majority's construction is not *unambiguously* supported by the intrinsic record, and the Board's construction is not contradicted by the claim language or the intrinsic evidence.

In my view, the extrinsic record in this case is particularly relevant to understand how a person of ordinary skill in the art would understand the disputed term at the time the patent issued. *See Teva*, 135 S. Ct. at 841–42. This is particularly true post-*Aatrix*, which restricted this court's ability to decide legal issues and disregard existing underlying factual disputes. *See Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1128 (Fed. Cir. 2018) (noting that in deciding questions of law "there can be subsidiary fact questions which must be resolved en route to the ultimate legal determination").

The majority's claim construction analysis redefines the term "low-power transceiver" by importing a functional limitation from the written description and introducing ambiguity into the claim. As a result, the majority construes "low-power transceiver" to mean a transceiver that can only transmit and receive signals within a "limited transmission range." Maj. Op. 12–13. This rewriting of the claim alters the scope and recites an invention that is different from the invention claimed in the '842 patent.

For the foregoing reasons, I dissent.

III.

While I disagree with the majority's decision to reverse on claim construction, I share the majority's concern about the Board's avoidance of the first prong of the regulatory definition of "technological invention" under 37 C.F.R. § 42.301. Remand is necessary so that the Board may in the first instance interpret § 42.301(b)(1).