# United States Court of Appeals for the Federal Circuit

IN RE: POWER INTEGRATIONS, INC., Appellant

2017-1304

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 90/008,326.

Decided: March 19, 2018

HOWARD G. POLLACK, Fish & Richardson, PC, Redwood City, CA, argued for appellant. Also represented by MICHAEL R. HEADLEY, NEIL WARREN; CRAIG E. COUNTRYMAN, San Diego, CA; FRANK SCHERKENBACH, Boston, MA.

AMY J. NELSON, Office of the Solicitor, United States Patent and Trademark Office, Alexandria, VA, argued for appellee Andrei Iancu. Also represented by NATHAN K. KELLEY, THOMAS W. KRAUSE, MOLLY R. SILFEN.

Before MOORE, MAYER, and STOLL, Circuit Judges.

## MAYER, Circuit Judge.

Power Integrations, Inc. ("Power Integrations") appeals the remand decision of the Patent Trial and Appeal Board ("board") rejecting claims 1, 17, 18, and 19 of U.S.

Patent No. 6,249,876 ("the '876 patent") as anticipated. See In re Power Integrations, Inc., No. 90/008,326, 2016 Pat. App. LEXIS 11870 (P.T.A.B. Oct. 4, 2016) ("Remand Decision"). Because the board's anticipation rejections were based on an unreasonably broad claim construction, we reverse.

## I. BACKGROUND

# A. The '876 Patent

The '876 patent is entitled "Frequency Jittering Control for Varying the Switching Frequency of a Power Supply." It describes a technique for reducing electromagnetic interference ("EMI") noise "by jittering the switching frequency of a switched mode power supply." '876 patent, col.1 ll.66–67. Claim 1, as amended, recites:

A digital frequency jittering circuit for varying the switching frequency of a power supply, comprising:

an oscillator for generating a signal having a switching frequency, the oscillator having a control input for varying the switching frequency;

a digital to analog converter coupled to the control input for varying the switching frequency; and

a counter coupled to the output of the oscillator, the digital to analog converter coupled to the counter, the counter causing the digital to analog converter to adjust the control input and to vary the switching frequency of the power supply.

# J.A. 817.

Claims 17 and 19 relate to a method for varying the switching frequency using a varying voltage to control the oscillator. Independent claim 17, as amended, requires "cycling a counter" to generate a secondary voltage that varies over time:

A method for generating a switching frequency in a power conversion system, comprising:

generating a primary voltage;

cycling a counter coupled to one or more secondary voltage sources to generate a secondary voltage which varies over time; and

combining the secondary voltage with the primary voltage to be received at a control input of a voltage-controlled oscillator for generating the switching frequency of the power conversion system which is varied over time.

J.A. 819-20.

## **B.** District Court Proceedings

The '876 patent is no stranger to litigation. In 2004, Power Integrations brought suit against Fairchild Semiconductor International, Inc. and related parties (collectively "Fairchild") in the United States District Court for the District of Delaware. See Power Integrations. Inc. v. Fairchild Semiconductor Int'l, Inc., 422 F. Supp. 2d 446, 448 (D. Del. 2006) ("Power Integrations I"), aff'd in part, rev'd in part, vacated in part, 711 F.3d 1348 (Fed. Cir. 2013) ("Power Integrations III"). It alleged that Fairchild had willfully infringed the '876 patent, as well as U.S. Patent Nos. 4,811,075, 6,107,851, and 6,229,366. During claim construction proceedings, Power Integrations argued that the term "coupled" in claim 1 of the '876 patent, when read in light of the specification and surrounding claim language, required two circuits to be connected in a manner "such that voltage, current or control signals pass from one to another." Id. at 455-56 (citations and internal quotation marks omitted). It further contended that the "recited coupling" between the counter and the digital to analog converter must be "present for the purposes of control." *Id.* at 455 (citations and internal quotation marks omitted). The district court adopted Power Integrations' proposed claim construction, concluding that it was "consistent with the claim language and the context of the specification which describes the purpose for which various parts of the claimed invention are coupled." *Id.* at 456. The court emphasized, moreover, that its construction of the term "coupled" did not "require a direct connection or ... preclude the use of intermediate circuit elements." *Id.* 

In the wake of the trial court's claim construction. Fairchild withdrew its anticipation defense, instead arguing at trial that U.S. Patent No. 4.638,417 ("Martin") rendered claim 1 obvious. A jury returned a verdict of non-obviousness and the district court denied Fairchild's motion for judgment as a matter of law. On appeal, this court affirmed. See Power Integrations III, 711 F.3d at 1366-69. We noted that the "salient difference" between the '876 patent and Martin is Martin's inclusion of an erasable programmable read-only memory ("EPROM") between the counter and the digital to analog converter. Id. at 1366. We explained that Martin "always includes" an EPROM memory between the counter and digital-toanalog converter" and "does not teach removing the EPROM ... as in the '876 Patent." Id. at 1367. We also noted that "Martin's sole figure indicates that the EPROM is just as integral as the circuit's other components," id., and that "Martin's EPROM converts ordinary frequency-jittering, as in the '876 Patent, to 'masked' frequency-jittering," id. at 1368. We concluded, moreover, that "substantial evidence of objective considerations of non-obviousness [supported] the jury's conclusion that claim 1 of Power Integrations' '876 Patent would not have been obvious to the ordinarily skilled artisan." Id. at 1369.

In 2016, we affirmed a jury's determination that claim 1 was not invalid as anticipated by Martin or Andrew C. Wang & Seth R. Sanders, Programmed Pulsewidth Modulated Waveforms for Electromagnetic Interference Mitigation in DC-DC Converters, 8 IEEE Transactions on Power Elecs. 596–605 (1993) ("Wang"). See Power Integrations, Inc. v. Fairchild Semiconductor Int'l. Inc., 843 F.3d 1315, 1327–29 (Fed. Cir. 2016) ("Power Integrations V"). We explained that while both Martin and Wang "reduce the EMI signature associated with a power supply's oscillator," they "accomplish this reduction by varying the oscillator frequency through the use of a pseudo-random code stored in read-only memory (ROM)." Id. at 1327. The "result" of this arrangement is that the frequency varies according to data stored in the memory. Id. at 1328.

We further explained that in both Martin and Wang "[t]he ROM takes the output of the upstream counter as its input," and "then outputs a different, stored value to the digital-to-analog converter." *Id.* at 1329. In Martin and Wang, "[t]he addition of the ROM . . . ensures that no voltage, current or control signals pass from the counter to the digital-to-analog converter." *Id.* (citations and internal quotation marks omitted). Because Martin and Wang "decouple[]" the counter and the digital to analog converter, we concluded that substantial evidence supported the determination that these references did not disclose claim 1's "coupled" limitation. *Id.* 

## C. Reexamination Proceedings

In December 2006, while district court proceedings were pending, the United States Patent and Trademark Office ("PTO") granted Fairchild's request for *ex parte* reexamination of claims 1, 17, 18, and 19 of the '876 patent. The board affirmed the examiner's rejection of claim 1 as anticipated by Martin and Wang, as well as by Thomas G. Habetler & Deepakraj M. Divan, *Acoustic* 

Noise Reduction in Sinusoidal PWM Drives Using a Randomly Modulated Carrier, 6 IEEE Transactions on Power Elecs. 356-63 (1991) ("Habetler"). See In re Power Integrations, Inc., No. 2010-011021, 2010 Pat. App. LEXIS 19305, at \*7-12 (P.T.A.B. Dec. 22, 2010) ("Power Integrations II"). The board rejected Power Integrations' argument that "the respective counters in Martin, Wang and Habetler are not coupled to the respective digital to analog converters because [they] disclose a ROM separating a counter from a digital to analog converter." Id. at \*8 (citations and internal quotation marks omitted). Instead, relying on one of a number of definitions of the term "couple" in a generalist dictionary, the board determined that the term meant "to join (electric circuits or devices) into a single . . . circuit." Id. at \*7 (quoting Webster's Third Int'l Dictionary of the English Language Unabr. 521 (Philip B. Gove ed., 1993) ("Webster's Dictionary")). Applying this construction, the board held that Martin, Wang, and Habetler each disclosed a counter "coupled" to a digital to analog converter because the two components were joined in one circuit. Id. at \*9. The board did not address the district court's conclusion that claim 1's "coupled" limitation requires the counter and the digital to analog converter to be connected in a manner "such that voltage, current or control signals pass from one to another," Power Integrations I, 422 F. Supp. 2d at 455 - 56.

The board also affirmed the examiner's rejection of claims 17, 18, and 19 as anticipated by Habetler. In light of its construction of the term "coupled" in claim 1, the board rejected Power Integrations' argument that Habetler did not anticipate because it includes an EPROM between the counter and the digital to analog converter. See Power Integrations II, 2010 Pat. App. LEXIS 19305, at \*12. The board further rejected Power Integrations' argument that Habetler failed to disclose the claimed primary and secondary voltage sources. See *id.* at \*13–15.

After the board denied its petition for rehearing, Power Integrations appealed to this court. We vacated the board's decision, stating that it had "fundamentally misconstrued Power Integrations' principal claim construction argument and failed to provide a full and reasoned explanation of its decision to reject claim 1 of the '876 patent as anticipated." Power Integrations, Inc. v. Lee, 797 F.3d 1318, 1323–24 (Fed. Cir. 2015) ("Power *Integrations IV*). We explained that the board had "failed to straightforwardly and thoroughly assess the critical issue of whether claim 1, when viewed in light of the specification and the surrounding claim language, requires the counter itself-and not the counter and a memory functioning together-to drive the digital to analog converter to adjust the control input and to vary the switching frequency of the power supply." Id. at 1325 (footnote omitted).

We acknowledged that "the board is not generally bound by a prior judicial construction of a claim term" and that "in reexamination [the board] applies a different claim construction standard than that applied by a district court." *Id.* at 1326. We concluded, however, that since "Power Integrations' principal argument to the board about the proper interpretation of the term 'coupled' was expressly tied to the district court's claim construction, . . . the board had an obligation . . . to evaluate that construction and to determine whether it was consistent with the broadest reasonable construction of the term." *Id.* at 1327.

On remand, the board acknowledged that this court had expressed "concern" that its original decision had failed to assess whether the district court's interpretation of the term "coupled" was consistent with the broadest reasonable construction of the term. *Remand Decision*, 2016 Pat. App. LEXIS 11870, at \*9. It concluded, however, that a comparison of its claim construction with that of the district court was "unwarranted." Id. In the board's view, a district court's claim construction is "typically" narrower than the broadest reasonable construction of a term. Id. at \*16.

In again affirming the examiner's rejection of claims 1, 17, 18, and 19 as anticipated, the board continued to adhere to a generalist dictionary definition of the term "coupled." *Id.* at \*8. The board stated that it could "glean[] no substantial guidance from either the context of the claim itself or the Specification" regarding the meaning of the term. *Id.* The board determined, moreover, that "even if claim 1 requires the counter to drive the digital to analog converter," this "does not preclude the counter and a memory functioning together" to cause the converter to adjust the control input. *Id.* at \*14.

Power Integrations then appealed to this court. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A) and 35 U.S.C. § 141(b).

#### II. DISCUSSION

## A. Claim Construction

"If the intrinsic record fully governs the proper construction of a term, we review the [b]oard's claim construction de novo." Wasica Fin. GmbH v. Cont'l Auto. Sys., Inc., 853 F.3d 1272, 1278 (Fed. Cir. 2017). During reexamination, "the PTO must give claims their broadest reasonable construction consistent with the specification." In re ICON Health & Fitness, Inc., 496 F.3d 1374, 1379 (Fed. Cir. 2007). Even under the broadest reasonable construction rubric, however, the board must always "consider the claims in light of the specification and teachings in the underlying patent." In re CSB-Sys. Int'l, Inc., 832 F.3d 1335, 1341 (Fed. Cir. 2016) (citations and internal quotation marks omitted). And there is no reason why this construction could not coincide with that of a court in litigation.

## B. The "Coupled" Limitation

Claim 1 of the '876 patent recites a "circuit" comprised of an oscillator, a digital to analog converter, and a counter. J.A. 817. It further specifies that "the digital to analog converter [is] coupled to the counter, the counter causing the digital to analog converter to adjust the control input and to vary the switching frequency of the power supply." J.A. 817. The district court and the board interpreted this claim language very differently.<sup>1</sup> Relying exclusively on a definition from Webster's Dictionary, the board determined that the "coupled" limitation requires only that two components be "join[ed] . . . into a single . . . circuit." Remand Decision, 2016 Pat. App. LEXIS 11870, at \*8 (quoting Webster's Dictionary 521). It further determined that claim 1 does not require the counter itself to "cause" the digital to analog converter to adjust the control input and to vary the switching frequency. Id. at \*14. Instead, according to the board, the claim permits a "counter and a memory functioning together" to drive the digital to analog converter. Id.

The district court, by contrast, concluded that "in light of the claim language and specification," the "coupled" limitation requires a specific control relationship between the counter and the converter. *Power Integrations I*, 422

<sup>&</sup>lt;sup>1</sup> We have twice applied the district court's construction of the "coupled" limitation. See Power Integrations V, 843 F.3d at 1329 (upholding a jury verdict that claim 1 was not anticipated by Martin or Wang); Power Integrations III, 711 F.3d at 1366–69 (upholding a jury verdict that claim 1 was not obvious in view of Martin). The parties did not challenge the district court's claim construction in either of these previous appeals.

F. Supp. 2d at 455. Thus, the counter must be connected to the digital to analog converter in a way that allows the counter to pass "voltage, current or control signals" to it. *Id.* at 456. In other words, the counter itself drives the digital to analog converter. *See id.* at 455–56.

"While the broadest reasonable interpretation standard is broad, it does not give the [b]oard an unfettered license to interpret the words in a claim without regard for the full claim language and the written description." Trivascular, Inc. v. Samuels, 812 F.3d 1056, 1062 (Fed. Cir. 2016). The board's claim construction here was unreasonably broad and improperly omitted any consideration of the disclosure in the specification. See Novartis Pharm. Corp. v. Abbott Labs., 375 F.3d 1328, 1334 (Fed. Cir. 2004) ("Even when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents." (citations and internal quotation marks omitted)); Slimfold Mfg. Co. v. Kinkead Indus., Inc., 810 F.2d 1113, 1116 (Fed. Cir. 1987) ("Claims are not interpreted in a vacuum, but are part of and are read in light of the specification.").

Under the board's overly expansive view of the term "coupled," every element anywhere in the same circuit is potentially "coupled" to every other element in that circuit, no matter how far apart they are, how many intervening components are between them, or whether they are connected in series or in parallel. See In re Suitco Surface, Inc., 603 F.3d 1255, 1260 (Fed. Cir. 2010) ("The broadest-construction rubric coupled with the term 'comprising' does not give the PTO an unfettered license to interpret claims to embrace anything remotely related to the claimed invention."). On appeal, the Director acknowledges that claim 1 requires some type of "functional relationship between the counter and the digital-toanalog converter." The problem is that the board's claim construction does not define what type of functional relationship is required. The board suggests that the counter will "cause" the digital to analog converter to adjust the control input and to vary the switching frequency regardless of how insignificantly or indirectly the counter's output affects the converter's behavior. See Remand Decision, 2016 Pat. App. LEXIS 11870, at \*14 (concluding that the counter "causes" the digital to analog converter to adjust the control input and to vary the switching frequency even if the switching frequency varies according to data contained in a memory).

"[C]laim construction must begin with the words of the claims themselves." Amgen Inc. v. Hoechst Marion Roussel, Inc., 457 F.3d 1293, 1301 (Fed. Cir. 2006). By its plain terms, claim 1 requires the counter to "caus[e]" the converter to adjust the control input and to vary the switching frequency. J.A. 817. Nothing in the claim language suggests that this requirement will be met if, as in the prior art, the digital to analog converter's output varies based on data stored in a memory rather than according to signals relayed from the counter itself. See Power Integrations V, 843 F.3d at 1329 (explaining that in Martin and Wang the frequency of the oscillator is varied "through the use of a pseudo-random code stored in readonly memory (ROM)").

Another problem with the board's claim construction is that it renders claim language meaningless. As discussed above, claim 1 begins by reciting a "circuit" that includes both a counter and a digital to analog converter. J.A. 817. The phrase "the digital to analog converter [is] coupled to the counter," J.A. 817, would be superfluous if, as the board said, it means only that the two components are in the same circuit. See, e.g., Bicon, Inc. v. Straumann Co., 441 F.3d 945, 950–51 (Fed. Cir. 2006) (refusing to construe claim terms in a way that made other claim limitations meaningless); Merck & Co. v. Teva Pharm. USA, Inc., 395 F.3d 1364, 1372 (Fed. Cir. 2005) ("A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.").

Even more fundamentally, the board's unduly broad reading of the language of claim 1 is unsupported by the specification. See PPC Broadband, Inc. v. Corning Optical Commc'ns RF, LLC, 815 F.3d 747, 752 (Fed. Cir. 2016) ("The fact that [a claim term] has multiple dictionary meanings does not mean that all of these meanings are reasonable interpretations in light of [the] specification."). The '876 patent strives to eliminate unnecessary components and create a more compact circuit. See, e.g., '876 patent, col.1 ll.50-62 (explaining that "EMI may be reduced in a power supply by adding snubbers and input filters," but that "extra components can undesirably increase the size and weight of the power supply and thus the resulting product"); id. col.4 ll.9–10 (emphasizing that an advantage of the claimed invention is that it can create "a compact and inexpensive power supply system . . . with minimal EMI emissions"). The inclusion of a bulky preprogrammed memory between the counter and the digital to analog converter is inconsistent with the '876 patent's focus on minimizing circuit size. See Power Integrations III, 711 F.3d at 1368 (relying on testimony explaining that including a memory between the counter and the converter "adds expense and imposes design constraints" and that "because of its components, Martin's circuit cannot be integrated on a single chip").

Notably, moreover, every embodiment disclosed in the '876 patent shows a counter that passes voltage, current, or control signals to the digital to analog converter. See Astrazeneca AB, Aktiebolaget Hassle, KBI-E, Inc. v. Mut. Pharm. Co., 384 F.3d 1333, 1340 (Fed. Cir. 2004) ("[W]hile it is of course improper to limit the claims to the particular preferred embodiments described in the specification, the patentee's choice of preferred embodiments can shed light on the intended scope of the claims."). Figure 1 depicts a counter directly connected to the digital to analog converter, J.A. 15, and the accompanying description emphasizes that it is the "outputs" of the counter that drive the digital to analog converter. '876 patent, col.4 1.63; see also id. col.5 ll.52–55 (explaining that the "counter drives a plurality of current sources . . . such that the frequency of the primary oscillator is varied" (diagram numbers omitted)). Figure 2 shows that the step-wise increases in switching frequency are based on the outputs of the counter. J.A. 16; see also '876 patent, col.5 l.57– col.6 l.5. By contrast, nothing in the specification suggests that the claims can be stretched to cover a system in which a memory separates the counter and the digital to analog converter and severs the requisite control relationship between them.

In the board's view, claim 1 can be expanded to encompass a circuit in which the switching frequency varies based on data from a memory because neither the claim language nor the specification "requir[es] the lack of a Remand Decision, 2016 Pat. App. LEXIS memory." 11870, at \*13. This reasoning is unpersuasive. "The correct inquiry in giving a claim term its broadest reasonable interpretation in light of the specification is not whether the specification proscribes or precludes some broad reading of the claim term adopted by the examiner." In re Smith Int'l, Inc., 871 F.3d 1375, 1382-83 (Fed. Cir. 2017). Instead, a proper claim construction analysis endeavors to assign a meaning to a disputed claim term "that corresponds with . . . how the inventor describes his invention in the specification." Id. at 1383. Although the '876 patent does not expressly exclude a circuit in which a pre-programmed memory is placed between the counter and the digital to analog converter and dictates the converter's behavior, such an arrangement is inconsistent with both the specification which, as discussed above, emphasizes the need to minimize circuit size and the plain claim language which specifically requires the counter—not some other circuit element—to "caus[e]" the converter to adjust the control input, J.A. 817.

## C. The Anticipation Rejections

Because the board's decision affirming the examiner's rejection of claim 1 was based on an erroneous claim construction and the rejection is not supported under the proper construction, we reverse the rejection of claim 1. See, e.g., Smith, 871 F.3d at 1382–84 (reversing an anticipation rejection because it was predicated on an unreasonably broad claim construction); Smith & Nephew, Inc. v. Rea, 721 F.3d 1371, 1380 (Fed. Cir. 2013) (reversing the board's non-obviousness determination because it "was mainly the result of . . . analytical errors" and "the facts [were] largely undisputed"); In re Skvorecz, 580 F.3d 1262, 1268 (Fed. Cir. 2009) (reversing the board's decision to reject reissue claims as anticipated because it was based on an unreasonably broad claim construction and explaining that "[a]nticipation cannot be found, as a matter of law, if any claimed element or limitation is not present in the reference"). In Martin, Wang, and Habetler, the prior art relied upon by the board, no voltage, current, or control signals pass from the counter to the digital to analog converter.<sup>2</sup> See Power Integrations

Wang describes a method of programming a memory to vary the switching frequency of a circuit used with a

<sup>&</sup>lt;sup>2</sup> Martin relies on an EPROM to vary the frequency in a "pseudo-random" manner. J.A. 1443. An oscillator generates the switching frequency, and then part of the oscillator's output is "fed back to [the] counter," which sends a signal to the memory that "selectively steps" the memory "through its addressing routine" for varying the switching frequency. J.A. 1443. The memory relays its instructions to the digital to analog converter, which transforms those digital instructions to an analog signal that is supplied to the oscillator. J.A. 1443.

V, 843 F.3d at 1329 (explaining that "[t]he addition of [a memory] . . . ensures that no voltage, current or control signals pass from the counter to the digital-to-analog converter" (citations and internal quotation marks omitted)); see also J.A. 760–62. In each of these references, the counter is separated from the digital to analog converter by a pre-programmed memory. J.A. 1441–44, 1448, 1453-61.This pre-programmed memory contains data specifying how to vary the switching frequency, see, e.g., J.A. 1442–43, 1448, 1454–60, and the switching frequency thus changes based on data from the memory, rather than the output of the counter, as claim 1 requires. See Power Integrations V, 843 F.3d at 1329 (explaining that in Martin and Wang the memory "takes the output of the upstream counter as its input," and "then outputs a *different*, stored value to the digital-to-analog converter" (emphasis added)). In short, because the prior art relies on an intervening memory to adjust the control input, it does not disclose a counter which is "coupled" to a digital

DC-to-DC converter. J.A. 1453–62. In the Wang system, an oscillator generates a signal having a switching frequency and part of that signal is sent to the counter. J.A. 1461. The counter then sends signals to a memory. J.A. 1461. Next, the memory sends its programmed instructions to a pair of digital to analog converters, which relay the memory's instructions on how to vary the switching frequency to the oscillator. J.A. 1461.

Habetler is directed to reducing acoustic noise in an inverter-driven electric machine. J.A. 1445–52. In the Habetler system, a triangle generator generates a switching frequency which is relayed, in part, to a counter. J.A. 1448. The counter sends signals to the memory, which contains "a large quantity of periodic random numbers" that are used to vary the switching frequency. J.A. 1448. The memory then sends instructions to the digital to analog converter. J.A. 1448.

to analog converter and "caus[es]" it "to adjust the control input and to vary the switching frequency of the power supply," J.A. 817.

The board's unreasonably broad claim construction also mandates reversal of its anticipation rejections of claims 17, 18, and 19. Independent claim 17 contains a "coupled" limitation similar to that in claim 1, reciting "a counter coupled to one or more secondary voltage sources to generate a secondary voltage which varies over time," J.A. 820. The Director does not dispute that a reversal of the board's rejection of claim 1 also mandates reversal of its rejections of claims 17, 18, and 19.<sup>3</sup>

The board has had two opportunities to come up with a sustainable interpretation that differs from the one that survived litigation and has failed. We conclude there is not one. The district court's construction of "coupled," an interpretation firmly rooted in the plain claim language and the specification, comports with the broadest reasonable construction of the term.

## **III.** CONCLUSION

Accordingly, the decision of the Patent Trial and Appeal Board affirming the examiner's rejections of claims 1, 17, 18, and 19 is reversed.

# REVERSED

<sup>&</sup>lt;sup>3</sup> Because we conclude that Habetler does not disclose the "coupled" limitation of claims 17, 18, and 19, we need not reach Power Integrations' alternative argument that Habetler does not disclose "generating a primary voltage," a "voltage-controlled oscillator," or "one or more secondary voltage sources to generate a secondary voltage." J.A. 819–20.