United States Court of Appeals for the Federal Circuit

SOUTHWIRE COMPANY,
Appellant

v.

CERRO WIRE LLC, FKA CERRO WIRE, INC.,
Appellee

2016-2287

Appeal from the United States Patent and Trademark Office, Patent Trial and Appeal Board in No. 95/000,696.

Decided: September 8, 2017

KIRK T. BRADLEY, Alston & Bird LLP, Charlotte, NC, argued for appellant. Also represented by KEITH E. BROYLES, Atlanta, GA; CHRISTOPHER L. MCARDLE, New York, NY.

PAUL RICHARD STEADMAN, DLA Piper US LLP, Chicago, IL, argued for appellee. Also represented by JENNIFER E. LACROIX.

Before LOURIE, MOORE, and HUGHES, *Circuit Judges.*

LOURIE, *Circuit Judge.*

Southwire Co. ("Southwire") appeals from the decision of the U.S. Patent and Trademark Office ("the PTO") Patent Trial and Appeal Board ("the Board") in an *inter partes* reexamination concluding that claims 1–42 of U.S. Patent 7,557,301 ("the '301 patent") are unpatentable under 35 U.S.C. § 103. *See Cerro Wire, Inc. v. Southwire Co.*, No. 2015-004351, 2015 Pat. App. LEXIS 10285 (P.T.A.B. Sept. 29, 2015) ("*Final Decision*"); *Cerro Wire, Inc. v. Southwire Co.*, No. 2015-004351, 2016 Pat. App. LEXIS 1942 (P.T.A.B. May 2, 2016) (decision on request for rehearing). For the reasons that follow, we affirm.

BACKGROUND

Southwire owns the '301 patent, which is directed to a method of manufacturing an electric cable, wherein a lubricant is incorporated into the outer sheath such that the lubricant migrates to the surface of the sheath and results in a reduction in pulling force required to install the cable. *See, e.g.*, '301 patent Abstract. According to the patent, one prior art solution for reducing the pulling force on a cable during installation was a post-manufacturing method of coating the exterior surface of the cable with a lubricant, such as petroleum jelly, immediately prior to installation. *See id.* col. 1 ll. 25–28. Southwire explains that this solution was referred to as applying "soap" to the cable, and that it was expensive and inefficient. *See, e.g.*, Appellant's Br. 5–6. The '301 patent purports to improve upon the prior art methods by incorporating a lubricant into the cable sheath material *during manufacture*, so that the finished cable sheath comprises a lubricant that will migrate to the exterior of the sheath and lubricate the surface during installation. *See* '301 patent col. 2 ll. 40–65.

Claim 1 of the '301 patent is illustrative and reads as follows:

> 1. In a method of manufacturing a finished electrical cable having a conductor core and a jacket

> formed primarily of a first material, the jacket surrounding at least said conductor core and defining the outermost exterior surface of the finished cable, the improvement comprising
>
> combining a preselected lubricant with said first material prior to the formation of said jacket in order to provide a reduced coefficient of friction of said cable outermost exterior surface and also reduce the amount of force required to pull the cable, during its installation through building passageways,
>
> > in which said lubricant is of the type which migrates through said jacket to be available at said outermost exterior surface of said finished cable during the cable's installation through building passageways,
> >
> > the finished electrical cable having the characteristic that an *amount of force required to install said cable* through corresponding holes in an arrangement of four 2" x 4" wood blocks having holes drilled at 15° through the broad face and the centerlines of the holes are offset 10" and pulled through at 45° to the horizontal from the last block *is at least about a 30% reduction* in comparison to an amount of force required to install a non-lubricated cable of the same cable type and size through corresponding holes in said arrangement.

'301 patent, Reexamination Certificate, col. 1 ll. 25–47 (emphases and paragraph breaks added).

On September 14, 2012, Cerro Wire, Inc. ("Cerro") filed a request for *inter partes* reexamination of the '301 patent. That patent had undergone two previous *ex parte*

reexaminations wherein original claims 1–21 were determined to be patentable and new claims 22–29 were added. During the *inter partes* reexamination here on appeal, in which Southwire sought to add claims 30–42, the Examiner concluded that all claims, 1–42, would have been obvious over various combinations of prior art.

Only one combination is at issue in this appeal—U.S. Patent 6,160,940 ("*Summers*"), in view of Dow Corning Corporation, DOW CORNING® MB50-011 Masterbatch (1997-99) ("*Dow*") and Underwriters Laboratories, Inc., STANDARD FOR SAFETY NONMETALLIC-SHEATHED CABLES 32–34 (2000) ("*UL-719*")—and Southwire disputes only the Board's interpretation of *Summers*.

Summers describes a "fiber optic cable that is suitable for installation in a cable passageway" and teaches that "to reduce resistance to a cable pulling force," the plastic material used to form the cable "can include a friction reducing additive" that "migrat[es] to the surface of the cable jacket," such as, for example, fatty acids and silicone oils. Joint Appendix ("J.A.") 169–70. Although *Summers* does not expressly teach that the friction reducing additive can reduce the pulling force by "at least about . . . 30%," as required by claim 1, the Examiner adopted Cerro's argument that the finished cable of *Summers*, in view of the other references, "has the characteristic that an amount of force required to install said cable . . . is at least a 30% reduction" because that characteristic "is an inherent result of the cable being made in accordance with the method steps." *See Final Decision*, 2015 Pat. App. LEXIS 10285, at *9–10 (internal quotation marks omitted).

Southwire appealed to the Board, which affirmed, concluding that the Examiner's rejection was supported by a preponderance of the evidence. *See id.* at *10–11. The Board explained that "[w]here the claimed and prior art products are . . . produced by identical or substantially

identical processes, a prima facie case of either anticipation or obviousness has been established." *Id.* at *12. It found that *Summers*'s lubricants "would achieve the claimed force reduction" because *Summers* (in view of *Dow*) teaches the same method steps—namely, extruding a cable jacket formed from a plastic material containing a lubricant, such that the lubricant migrates to the surface of the jacket and lubricates the interface between the cable and any surface of the cable passageway. *Id.* at *13. The Board explained that because the claims recite "a preselected lubricant" chosen to "provide a reduced coefficient of friction," they "require an amount of lubricant which meets the stated reduction in [coefficient of friction]." *Id.* at *16. Thus, the Board concluded, because *Summers* teaches reducing the coefficient of friction using a lubricant, it inherently teaches the 30% reduction limitation because it renders it "obvious to have selected [lubricant] amounts" that achieve the claimed reduction. *Id.* at *16 (internal quotation marks omitted).

The Board rejected all of Southwire's evidence as lacking factual support. The Board found that the three declarations of Southwire's expert, Mr. Sasse, were unpersuasive because the data tables provided therein fail to report standard deviations, statistical significance, or certain relevant details of the experimental design. *Id.* at *16–21. The Board found that all of Southwire's objective evidence lacked factual support because it contained only "general allegation[s]" without corroborating evidence. *Id.* at *24–26. Furthermore, the Board found that the objective evidence related generally to one of Southwire's products (SIMpull), with no evidence that SIMpull embodies the 30% reduction, or any other, claim limitation. *Id.* at *25, *26, *30–34. The Board found that, while Southwire's evidence showed a long-felt need, it did not establish a long-felt need *without solution*—rather, the solution had been provided by *Summers* because the need was for a (general) alternative to the prior art use of "soap" on the

cables, not for a (specific) 30% reduction in pulling force using lubricants incorporated into the sheath. *Id*. at *33–36.

Southwire timely appealed to this court. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

DISCUSSION

We review the Board's legal determinations *de novo*, *In re Elsner*, 381 F.3d 1125, 1127 (Fed. Cir. 2004), and the Board's factual findings underlying those determinations for substantial evidence, *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). A finding is supported by substantial evidence if a reasonable mind might accept the evidence to support the finding. *Consol. Edison Co. v. NLRB*, 305 U.S. 197, 229 (1938). Obviousness is a question of law, based on underlying factual findings, including what a reference teaches, whether a person of ordinary skill in the art would have been motivated to combine references, and any relevant objective indicia of nonobviousness. *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1047–48, 1051 (Fed. Cir. 2016) (en banc).

Southwire argues that, as an initial matter, the Board erred in relying on "inherency" in making its obviousness determination. Second, Southwire argues that *Summers* does not inherently teach the "at least about a 30% reduction" in pulling force limitation because a limitation is not inherent in a reference unless it is necessarily, i.e., *always*, present. Thus, Southwire argues, the Board's finding that a "skilled artisan *would have had reason to* select [lubricant] concentrations that did" achieve the 30% reduction in pulling force is the antithesis of inherency, which requires certainty, not experimentation. *Final Decision*, 2015 Pat. App. LEXIS 10285, at *21.

Cerro responds that substantial evidence supports the Board's finding that any cable made with the same manufacturing steps as *Summers* (in view of *Dow*), using the

same lubricant in amounts sufficient to reduce the coefficient of friction and pulling force (as disclosed in *Summers* and *Dow*), would also produce the same result recited in the claims. Cerro contends that it is well-established law that, in cases such as this one, a *prima facie* case for obviousness is met where the only difference between the claimed and prior art process is a property that results from performing the process. Cerro argues that it is not inventive to claim a test for cables made in accordance with known prior art methods and discover that the cable has that certain performance characteristic.

First, we agree with Southwire that the Board erred in relying on inherency in making its obviousness determination. We have held that "the use of inherency in the context of obviousness must be carefully circumscribed because '[t]hat which may be inherent is not necessarily known' and that which is unknown cannot be obvious." *Honeywell Int'l v. Mexichem Amanco Holding S.A.*, No. 2016-1996, —F.3d—, 2017 WL 3254943, at *10 (Fed. Cir. Aug. 1, 2017) (quoting *In re Rijckaert*, 9 F.3d 1531, 1534 (Fed. Cir. 1993)). While "[w]e have recognized that inherency may supply a missing claim limitation in an obviousness analysis," *PAR Pharm., Inc. v. TWI Pharm., Inc.*, 773 F.3d 1186, 1194–95 (Fed. Cir. 2014) (collecting cases), we have emphasized that "the limitation at issue *necessarily* must be present" in order to be inherently disclosed by the reference, *id.* (emphasis added). The Board cited no evidence that a reduction of 30% in the pulling force would necessarily result from the claimed process, which contains no steps that ensure such reduction.

Here, the Board found that because the claims recite "a preselected lubricant" chosen to "provide a reduced coefficient of friction," they "require an amount of lubricant which meets the stated reduction in [coefficient of friction]." It found that, because *Summers* teaches reducing the coefficient of friction using a lubricant, *Summers* inherently teaches the 30% reduction limitation because

Summers renders it "*obvious* to have selected [lubricant] amounts" that achieve that result. *Final Decision*, 2015 Pat. App. LEXIS 10285, at *16 (emphasis added). We conclude that the Board erred in relying on inherency without finding that *Summers necessarily* would achieve a 30% reduction in pulling force, but rather finding that it merely renders that limitation obvious.

However, we also conclude that the Board's error was harmless because, although it improperly invoked inherency, it need not have. It made the necessary underlying factual findings to support an obviousness determination. It found that the claimed method simply applies the same process for the same purpose as disclosed in *Summers*—i.e., to reduce the pulling force on a cable for ease of installation. *See, e.g.*, J.A. 169.

The Board found that *Summers* discloses an "identical or substantially identical" process to that claimed in the '301 patent. *Final Decision*, 2015 Pat. App. LEXIS 10285, at *12. It found that *Summers* teaches that a "fiber optic cable . . . is extruded with [a] cable jacket . . . formed from plastic material (e.g., polyethylene) containing a lubricant (e.g., fatty acid[] compounds, silicon oils, or fluorocompounds), with such lubricant characterized by migrating to the surface of [the] cable jackets . . . and lubricating the interface between the cable jackets and virtually any surface of or in the cable passageway." *Id.* at *12–13. Those findings are supported by substantial record evidence. *See, e.g.*, J.A. 169–70.

None of the patented steps differs in any material way from the process disclosed in *Summers* (in view of *Dow*). And there is no evidence that the claimed 30% reduction in pulling force would have been unexpected or unattainable from the process disclosed in *Summers*. In fact, there is no evidence that the process disclosed in *Summers* did *not* produce an "at least . . . 30% reduction" in pulling force. Our predecessor court has held that where "*all*

process limitations . . . are expressly disclosed by [the prior art reference], except for the *functionally expressed* [limitation at issue]," the PTO can require an applicant "to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on." *In re Best*, 562 F.2d 1252, 1254–55 (CCPA 1977) (emphases added) (internal quotation marks omitted). The court noted that "[w]hether the rejection is based on 'inherency' under 35 U.S.C. § 102, [or] on 'prima facie obviousness' under 35 U.S.C. § 103, . . . the burden of proof is the same." *Id.*

Simply because *Summers* never quantified the reduction in pulling force achieved by its disclosed embodiments does not preclude the possibility, or even likelihood, that its process achieved at least a 30% reduction, especially since its stated purpose was the same as that of the '301 patent—to reduce the pulling force on the cable for ease of installation. *See, e.g.*, J.A. 169. In the absence of any evidence that the claimed 30% reduction would have been unexpected in light of the *Summers* disclosure, there is no indication that the limitation is anything other than mere quantification of the results of a known process.

Furthermore, the 30% reduction limitation was added to the claim by amendment in a previous reexamination in order to overcome the prior art, J.A. 3–4, 58–60, with seemingly no focus on that limitation in the original written description. Other than a single mention that, under a certain test, "lubricated specimens" (the details of which are undisclosed) yielded a 50% reduction in pulling force compared to non-lubricated standards, '301 patent col. 6 ll. 20–24, the written description provides no discussion regarding the *amount* of reduction in pulling force; it merely teaches that one can reduce the pulling force by incorporating certain lubricants into the cable sheath, as taught by *Summers*. Thus, neither the patent itself nor any evidence proffered by Southwire during the reexamination provides any indication that the "at least about a

30% reduction" limitation was something other than an observed result of an old process, written into the claim in an attempt to avoid the prior art process.

In sum, the Board's underlying factual findings are supported by substantial evidence and reasonably support its conclusion that it would have been "*obvious* to have selected such amounts" as would achieve the claimed reduction in pulling force because "the claims require an amount of lubricant which meets the stated reduction in [coefficient of friction]" and "*Summers* teaches reducing the coefficient of friction" using the same process, for the same purpose. *Final Decision*, 2015 Pat. App. LEXIS 10285, at *16.

Southwire also argues that the Board erred in acknowledging that Southwire's evidence shows a long-felt need, but then disregarding the evidence by finding that the prior art solved that need. Southwire argues that such an approach is circular and would render consideration of long-felt need a dead letter. Under that reasoning, Southwire contends, every time the Board finds that a reference teaches a limitation, there could never be a long-felt need, as the reference purportedly already provided a solution.

Cerro responds that the Board correctly rejected Southwire's objective evidence because the declarations provided do not relate specifically to the claims at issue and they contain no proof of a nexus to any of the claim limitations. And, Cerro continues, the Board correctly characterized the problem to be solved broadly, because that characterization is supported by the '301 patent itself. Under that broad characterization, Cerro contends, *Summers* indisputably provided several solutions before the '301 patent's priority date. It taught using cable sheaths with irregular surface characteristics, as well as the claimed solution of lubricants incorporated into the sheath.

We agree with Cerro. Substantial evidence supports the Board's findings that Southwire's evidence lacked factual support, that its objective evidence lacked a nexus to the claimed invention, and that any long-felt need adduced from the evidence had already been met by *Summers*. We see no legal error in its analysis.

CONCLUSION

We have considered the parties' remaining arguments but find them to be unpersuasive. For the foregoing reasons, we affirm the decision of the Board.

AFFIRMED