

United States Court of Appeals for the Federal Circuit

99-1400

ARTHUR A. COLLINS, INC.,

Plaintiff-Appellant,

v.

NORTHERN TELECOM LIMITED and NORTHERN TELECOM, INC.,

Defendants-Appellees.

Rolf Stadheim, Stadheim & Gear, Ltd., of Chicago, Illinois, argued for plaintiff-appellant. With him on the brief was Joseph A. Gear. Of counsel on the brief were Amy Sanborn Owen, and David J. Ervin, Miles & Stockbridge, of McLean, Virginia.

J. Michael Jakes, Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., of Washington, DC, argued for defendants-appellees. With him on the brief was Doris Johnson Hines.

Appealed from: United States District Court for the Eastern District of Virginia

Judge Leonie M. Brinkema

United States Court of Appeals for the Federal Circuit

99-1400

ARTHUR A. COLLINS, INC.,

Plaintiff-Appellant,

v.

NORTHERN TELECOM LIMITED and NORTHERN TELECOM, INC.,

Defendants-Appellees.

DECIDED: June 16, 2000

Before NEWMAN, BRYSON, and GAJARSA, Circuit Judges.

BRYSON, Circuit Judge.

Arthur A. Collins, Inc., (Collins) owns U.S. patents for inventions in the field of networking and switching systems for digital telecommunications. Patent No. 4,701,907 (the '907 patent) claims a structure that synchronizes communications within a network. Patent No. 4,797,589 (the '589 patent) claims a structure that dynamically switches selected communication channels at a network node while allowing unselected channels to bypass the node. Both patents tout numerous advantages of the claimed inventions, particularly when used in a network employing fiber-optic transmission equipment.

As the use of fiber-optic transmission systems increased in the United States, carriers relying on such systems sought to standardize system specifications so that the equipment of various manufacturers would interoperate. Those efforts resulted in the Synchronous Optical Network (SONET) standard, which defines certain multiplexing, synchronizing, and controlling protocols. Northern Telecom Ltd. and Northern Telecom, Inc., (collectively Nortel) manufacture and sell fiber-optic transmission equipment that conforms to the SONET standard, such as add and drop multiplexers (ADMs). An ADM routes traffic between a tributary that is a source or destination of traffic and a fiber-optic network that transports the traffic.

Collins asserts that the use of a Nortel SONET ADM, either in conjunction with a central-office switch from Nortel's DMS line of switches or in conjunction with a digital switch made by other manufacturers, infringes its '907 and '589 patents (the Collins patents). Based on that theory and others, Collins filed a patent infringement action against Nortel in the United States District Court for the Eastern District of Virginia. In the course of the proceedings before that court, the district judge first construed the claim limitation "time-space-time (TST) switch," which is common to both patents. Based on her construction of that limitation, the district judge granted summary judgment that Nortel equipment did not literally infringe Collins's patents, that Nortel did not contributorily infringe the patents, that Nortel did not induce infringement of the patents, and that Nortel did not willfully infringe the patents.

The court subsequently issued an opinion construing other limitations of the patents' claims as well. Faced with adverse constructions of key limitations, Collins supplemented its opposition to Nortel's motion for summary judgment of noninfringement, conceding noninfringement under those constructions. The court then entered final judgment of noninfringement of all the claims at issue.

Collins appeals from the final judgment of the district court, specifically challenging the grants of summary judgment of no literal infringement and no induced infringement. Collins also argues for rejection of the court's constructions of other claim limitations, which could be relevant if we reversed the district court's grants of summary judgment and remanded the case for further proceedings. Collins has not advanced any arguments related to infringement under the doctrine of equivalents in this appeal. Because we affirm the contested grants of summary judgment regarding literal infringement and inducement to infringe, we decline to reach the unrelated issues of claim construction.

I

A single claim limitation, common to both patents, is dispositive of this appeal. Each patent sets forth an independent first claim followed by two dependent claims. Claim 1 of the '589 patent reads as follows in pertinent part:

A dynamically reconfigurable time-space-time (DRTST) switching system for use in conjunction with a high speed transmission media which conveys a plurality of time division multiplex (TDM) channels within a repeated frame of data, comprising:

. . . .
a time-space-time (TST) switch having a space switch including a plurality of inlet ports and a plurality of outlet ports each having a memory;

Claim 1 of the '907 patent contains essentially the same preamble and also requires "a TST switch connected to receive said channels of data from the first line terminating unit at the inlet ports thereof." Both patents share the same written description, and the '589 patent is a continuation of the '907 patent. Consequently, the district court determined that a common construction of the TST switch limitation for both patents was appropriate.

The district court construed the TST switch limitation to require a three-stage switch. The first and third stages are time switches, which allow a change in the time slot occupied by a channel of data within a frame of channels. The first and third stages include the ports of the TST switch, with each port having a memory. The second stage is a single-stage space switch, which performs a change in the physical transmission path of a channel. To reach that construction of the TST switch limitation, the court relied primarily on the sole embodiment of the invention set forth in the written description and illustrated in figure 3 of each patent. Although the written description refers to TST switches and systems disclosed and claimed in several other patents, the court declined to consider the teachings of those patents to ascertain the meaning of the term as used in the '589 and '907 patents or as understood by a person skilled in the telecommunications art.

In construing the TST switch limitation, the district court properly consulted the written description and figure 3 of the patent. See, e.g., CVI/Beta Ventures, Inc. v. Tura LP, 112 F.3d 1146, 1153, 42 USPQ2d 1577, 1583 (Fed. Cir. 1997). The written description and the drawing, however, do not suggest that Collins was using the term "TST switch" in a special manner in the two patents. In particular, nothing in the claims, descriptions, or drawings of the '589 and '907 patents requires limiting the TST switch to a single-stage space switch. Nor does any point of novelty or asserted advantage of the Collins inventions depend on the TST switch having a single-stage space switch. Accordingly, the normal rule of construing patent terms as persons skilled in the art would understand them applies in this case.

Even when prior art is not cited in the written description or the prosecution history, it may assist in ascertaining the meaning of a term to a person skilled in the art. See Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1584, 39 USPQ2d 1573, 1578 (Fed. Cir. 1996). When prior art that sheds light on the meaning of a term is cited by the patentee, it can have particular value as a guide to the proper construction of the term, because it may indicate not only the meaning of the term to persons skilled in the art, but also that the patentee intended to adopt that meaning.

The '589 and '907 patents note that "system improvements attainable with time division transmission and switching techniques are very significant, and have resulted in the development of TST switches and systems described and claimed in, for example, U.S. Pat. Nos. 3,925,621; 3,956,593; 4,005,272; and 4,038,497." '589 patent, col. 2, ll. 9-14; '907 patent, col. 2, ll. 1-6. The cited patents indicate that switches with time-switch inputs and outputs and with multiple intermediate space switches are referred to as TST switches, even though such structures can also be called, for example, TSSST switches. Based on the way the term "TST switch" is used in those patents, and the absence of any indication in Collins's patents or in their prosecution histories that the term was meant to have a different meaning in the '589 and '907 patents, we agree with Collins that the TST switch limitation allows a multiple-stage space switch, rather than just a single-stage space switch.

Collins presses its argument farther and urges us to adopt a broader construction that would allow any combination of intermediate stages that includes at least one space-switch stage and that would

allow a space switch to contain additional structure for time translation. The evidence, however, does not support that construction. The prior-art patents indicate that a space-switch stage is just that — a structure that provides space translation without time translation — and therefore contains no structure used for time translation, such as memory for channel storage.

Regarding the intermediate stages, we adopt the meaning of TST switch that is used in the patents referred to in the written description, which appears to be the meaning given the term by a person skilled in the art. Thus, we construe the TST switch limitation to mean a structure with time-switch input and output stages, and with one or more intermediate space-switch stages containing only structure for space translation.

Claim 1 of the '589 patent further requires each of the inlet and outlet ports of the TST switch to have a memory. The written description states that "[w]ith N bi-directional links, there will be 2N memories," '589 patent, col. 5, ll. 26-27, indicating that the memory associated with each port of the TST switch is a distinct structure, which is "sized to store one frame . . . that will be accessed at one switch port," *id.*, col. 3, ll. 31-33. The district court construed the '907 patent to require the same individual-memory structure, even though the '907 patent does not contain the additional claim language found in the '589 patent regarding individual port memories. The Collins patents — one a continuation of the other — use an identical written description, and the prior-art patents cited by the written description disclose TST switch embodiments that all use individual port memories. For those reasons, it may be appropriate to apply the additional limitation to the '907 patent as well. Nortel, however, has not argued that the individual-memory requirement applies to the '907 patent, and we need not reach that issue for purposes of this appeal.

II

Based on its construction of the TST switch limitation and Nortel's assertion that its equipment does not contain TST switches, the district court granted Nortel's motion for summary judgment that its equipment does not literally infringe the Collins patents. Collins resisted the motion by producing a declaration of its expert, Dr. Helgert, alleging that the Nortel equipment contains TST switches. Collins contends that the grant of summary judgment was improper because there are genuine issues of material fact concerning the structures used by Nortel equipment for time and space switching, as demonstrated by Dr. Helgert's declaration. We disagree.

In moving for summary judgment on an issue as to which Collins bore the burden of proof, Nortel discharged its initial responsibility by stating the basis for its motion and pointing out that the evidence in the record would be insufficient to avoid a directed verdict against Collins. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 323, 325 (1986). In response, Collins was required to designate specific facts showing that there was a genuine issue for trial. *See id.* at 324; *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248-49 (1986).

In opposing summary judgment on the TST switch limitation, Collins asserted that Nortel's DMS switches have either a JNET or an ENET switching fabric, and that both JNET and ENET are TST switches. After examining the material Collins submitted in opposition to Nortel's summary judgment motion, however, we are persuaded that Collins did not designate specific facts sufficient to avoid summary judgment with respect to either accused device.

A

With respect to JNET, Collins offered Dr. Helgert's assertion, in his declaration, that "The so-called JNet is a TST switch. (See Ex. I.)" Exhibit I is U.S. Patent No. 4,123,624 (the '624 patent), which is assigned to Nortel. For several reasons, we agree with the district court that Dr. Helgert's statement was not sufficient to satisfy Collins's burden of demonstrating that there is a genuine issue of material fact with respect to that issue.

First, it is well settled that an expert's unsupported conclusion on the ultimate issue of infringement is insufficient to raise a genuine issue of material fact. See Zelinski v. Brunswick Corp., 185 F.3d 1311, 1317, 51 USPQ2d 1590, 1594 (Fed. Cir. 1999) (conclusory expert declarations devoid of facts upon which the conclusions were reached do not raise a genuine issue of material fact). A party may not avoid that rule by simply framing the expert's conclusion as an assertion that a particular critical claim limitation is found in the accused device. See Phillips Petroleum Co. v. Huntsman Polymers Corp., 157 F.3d 866, 876, 48 USPQ2d 1161, 1169-70 (Fed. Cir. 1998) (expert declarations that accused product and process met the critical claim limitation were "wholly conclusory, devoid of facts upon which the affiant[s'] conclusions, as experts, were reached").

Dr. Helgert's statement that the "so-called JNet is a TST switch" is nothing more than an unsupported assertion that the accused device contains a critical claim limitation and clearly would be insufficient, standing alone, to create a genuine issue of material fact. Dr. Helgert did not support his assertion that "JNet is a TST switch" with an explanation of why JNET's structure renders it a TST switch in his view; *i.e.*, there is nothing in his declaration that would allow a finder of fact to conclude that JNET constitutes a TST switch as that term is used in the patent. Dr. Helgert's unelaborated reference to Exhibit I (Nortel's '624 patent) adds nothing of substance to his assertion. In particular, his citation to the Nortel patent does not constitute an allegation that JNET practices that invention, and it does not remotely justify counsel's assertion in the district court that "[t]he configuration of the JNET is illustrated in Nortel's U.S. Patent No. 4,123,624 (Exh. I)." Although all justifiable inferences must be drawn in Collins's favor, *see Anderson*, 477 U.S. at 255, the inference that Collins's counsel asks us to draw cannot be justified simply by noting Nortel's ownership of a patent for a switching device.

The citation to the '624 patent not only fails to support Dr. Helgert's assertion that JNET contains a TST switch, it actually undermines that assertion, at least with respect to the '589 patent. The switch disclosed in the '624 patent has a common memory for each group of eight ports, *see* '624 patent, col. 3, ll. 54-63 & fig. 3b, while the TST switch claimed in the '589 patent uses a separate memory for each port. The switch disclosed in the '624 patent is therefore not a TST switch as claimed in the '589 patent. For that reason, Dr. Helgert's citation to the '624 patent actually supports Nortel's contention that there is no genuine issue of material fact with respect to the TST switch limitation.

Another source cited by Dr. Helgert further undermines Collins's opposition to summary judgment. At one point in his declaration, Dr. Helgert stated that "JNET has been replaced with . . . ENET." To support that proposition, he cited three sources, including a book, Roger L. Freeman, Telecommunication System Engineering (3d ed. 1996). On appeal, Collins contends that the Freeman reference, which states that Nortel "modified the older DMS100 conventional switch, which had a TSTS-folded architecture," *id.* at 414, provides additional evidence of a genuine issue for trial. As in the case of Dr. Helgert's effort to link JNET with the '624 patent, however, his declaration fails to offer any evidence linking the DMS100 conventional switch to JNET. Moreover, even assuming that we could infer that the DMS100 conventional switch uses JNET, the reference relied on by Dr. Helgert notes that the older DMS100 switch has a TSTS structure, not a TST structure, which contradicts, rather than supports, Dr. Helgert's theory that JNET is a TST switch.

Second, the parties disputed the meaning of the term "TST switch," and the issue of literal infringement turned on the resolution of that dispute. To the extent that Dr. Helgert's construction of the term "TST switch" can be discerned from his several submissions to the district court, his construction was broader than the one we have adopted. Absent any factual support for his assertion that JNET is a TST switch, that assertion is thus no different from a statement that "the JNET is a TST switch as I define the term," which is legally insufficient to satisfy Collins's burden in responding to Nortel's summary judgment motion. *See, e.g., Becton Dickinson & Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 797, 17 USPQ2d 1097, 1100 (Fed. Cir. 1990); Johnston v. IVAC Corp., 885 F.2d 1574, 1578-79, 12 USPQ2d 1382, 1385 (Fed. Cir. 1989); Townsend Eng'g Co. v. HiTec Co., 829 F.2d 1086, 1089-90, 4 USPQ2d 1136, 1139 (Fed. Cir. 1987).

When, as here, the construction of a critical claim limitation is in dispute, a party may not avoid summary judgment simply by offering an opinion of an expert that states, in effect, that the critical claim limitation is found in the accused device. Although such testimony of an expert witness may be proper during trial when the opposing party can challenge the factual basis of the expert's opinion during cross-examination, see, e.g., Fed. R. Evid. 705; Symbol Techs., Inc. v. Opticon, Inc., 935 F.2d 1569, 1574-76, 19 USPQ2d 1241, 1245-46 (Fed. Cir. 1991), the affidavit of an expert submitted in opposition to a motion for summary judgment must do more by "set[ting] forth specific facts showing that there is a genuine issue for trial." Fed. R. Civ. P. 56(e); see Charles Alan Wright & Victor James Gold, Federal Practice and Procedure § 6293, at 420-23 (1997). Thus, the expert must set forth the factual foundation for his opinion — such as a statement regarding the structure found in the accused product — in sufficient detail for the court to determine whether that factual foundation would support a finding of infringement under the claim construction adopted by the court, with all reasonable inferences drawn in favor of the nonmovant. The specific standard for applying that principle varies by circuit, but the district court's order in this case comports with Fourth Circuit law on this issue, see M & M Med. Supplies & Serv., Inc. v. Pleasant Valley Hosp., Inc., 981 F.2d 160, 164-66 (4th Cir. 1993), which applies because the issue is a procedural matter not unique to patent law, see, e.g., Glaverbel Societe Anonyme v. Northlake Mktg. & Supply, Inc., 45 F.3d 1550, 1560 n.3 (Fed. Cir. 1995).

In this case, that would have required Dr. Helgert to disclose the factual basis for his knowledge of JNET's structure and to state, if he could, that JNET comprises input and output time switches, with one or more intermediate space switches that do not contain memory or other structure for time translation. In addition, given the requirement of the '589 patent that each port have an individual memory, Dr. Helgert's declaration should have disclosed the feature of JNET's structure that meets that additional limitation. In fact, however, Dr. Helgert's declaration contained no discussion of the structure of the stages in JNET. His statement that the "so-called JNET is a TST switch" is thus an unsupported conclusion that a critical claim limitation is satisfied. Such a conclusion, which is equivalent to an unsupported conclusion on the ultimate issue of infringement, is insufficient to raise a genuine issue of material fact.

B

The evidence Collins elicited regarding ENET is similarly insufficient. Dr. Helgert declared that "ENET has data memories used for inlet and outlet traffic," that the "data memories are interconnected in a switched matrix using space switching," and that "[s]uch a switching matrix is called a space switch." Collins argues that Dr. Helgert's statements are supported by the technical documents he cited and that in interpreting those documents the district court engaged in impermissible fact finding. Those references, however, demonstrate that ENET is a matrix of memory elements (with the same memory element providing both input and output functions at each crosspoint), and they establish that ENET performs a time and space translation within a single stage and in a single operation. On the record before the district court, no reasonable jury could find that such a structure, even if coupled to other time switches, literally meets the TST limitation of the Collins patents. See, e.g., Nike Inc. v. Wolverine World Wide, Inc., 43 F.3d 644, 647, 33 USPQ2d 1308, 1040 (Fed. Cir. 1994). Nortel was therefore entitled to summary judgment that its equipment did not literally infringe the patents in suit.

III

The district court granted summary judgment that Nortel did not induce infringement of the '589 and '907 patents. In addition to contending that there are genuine issues of material fact with respect to that issue, Collins asserts that the court committed legal error by requiring it to tender "evidence that other manufacturers — with whom Nortel's products combine — directly infringe the patents in suit." According to Collins, "[t]here is no requirement that inducement must involve the combination of Nortel's products with those of 'other manufacturers.'"

To establish Nortel's liability for inducing infringement, Collins must show a direct infringement of the

'589 and '907 patents. See, e.g., Micro Chem., Inc. v. Great Plains Chem. Co., 103 F.3d 1538, 1549, 41 USPQ2d 1238, 1247 (Fed. Cir. 1997); Met-Coil Sys. Corp. v. Korner's Unlimited, Inc., 803 F.2d 684, 687, 231 USPQ 474, 477 (Fed. Cir. 1986). In its motion for summary judgment of noninfringement, Nortel limited its arguments to the contention that the combination of its ADM and DMS switch does not infringe and to the contention that the OC-192 model ADM does not infringe standing alone. In reply to Nortel's motion for summary judgment on contributory and induced infringement, Collins acknowledged the direct-infringement requirement and limited its theory of direct infringement solely to the issues raised in Nortel's motion for summary judgment of noninfringement.

Collins conceded in the district court that if that theory of direct infringement fails as a matter of law, "the inducement and contributory infringement claims also fall." We have upheld the grant of summary judgment that the combination of a Nortel ADM and DMS switch does not literally infringe. In this court, Collins has not advanced any other argument or theory of infringement; in particular, Collins has not presented a theory that such a combination infringes the Collins patents under the doctrine of equivalents, and Collins has likewise not contended that the OC-192 model ADM infringes standing alone. We thus have no basis for finding a genuine issue of material fact concerning direct infringement in connection with Collins's claim of induced infringement. Because there is no evidence of direct infringement, an essential element of induced infringement, we need not reach Collins's assertion that the district court committed legal error in other aspects of its analysis of the induced infringement claim.

IV

In light of our decision with respect to the two issues discussed above, it is not necessary for us to address Collins's assertions of error with respect to other claim construction issues, and we decline to do so. While those claim construction issues might have been applicable to a doctrine of equivalents argument, Collins has not raised any doctrine of equivalents argument before us. Simply challenging the district court's claim construction does not suffice to present on appeal the issue of summary judgment regarding infringement under the doctrine of equivalents. Accordingly, having resolved the two infringement issues presented to us in Nortel's favor, we affirm the judgment of the district court.

AFFIRMED.