

United States Court of Appeals for the Federal Circuit

04-1446

CYTOLOGIX CORPORATION,

Plaintiff-Appellee,

v.

VENTANA MEDICAL SYSTEMS, INC.,

Defendant-Appellant.

Jack R. Pirozzolo, Willcox, Pirozzolo & McCarthy, of Boston, Massachusetts, argued for plaintiff-appellee. With him on the brief was Judith S. Ziss.

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Appealed from: United States District Court for the District of Massachusetts

Judge Rya W. Zobel

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CYTOLOGIX CORPORATION,

Plaintiff-Appellee,

v.

VENTANA MEDICAL SYSTEMS, INC.,

Defendant-Appellant.

DECIDED: September 21, 2005

Before MAYER, GAJARSA, and DYK, Circuit Judges.

DYK, Circuit Judge.

Ventana Medical Systems, Inc. ("Ventana") appeals from the order of the United States District Court for the District of Massachusetts enjoining Ventana from various infringing acts. CytoLogix Corp. v. Ventana Med. Sys., Inc., No. 01-CV-10178 (D. Mass. Apr. 26, 2004). The injunction was based on a jury verdict of infringement. The jury found that Ventana infringed claims 1-3 and 5-15 of United States Patent No. 6,180,061 (the "'061 patent") and claims 1-3 and 5-13 of United States Patent No. 6,183,693 (the "'693 patent"). Ventana was enjoined from further infringement of the asserted claims. We uphold the injunction as to claims 8-14 of the '061 patent because we sustain the jury verdict of infringement. As to claims 1-3, 5-7, and 15 we also find that infringement has been established. However, we remand to the district court to

consider whether a new trial should be granted on the issue of obviousness with respect to claims 1-3, 5-7 and 15. We uphold the injunction with respect to claims 1-3 and 5-12 of the '693 patent because we sustain the jury verdict of infringement. With respect to claim 13, we reverse because the jury verdict of infringement is not supported by substantial evidence.

BACKGROUND

CytoLogix Corp. ("CytoLogix") is the assignee of the '061 and '693 patents. The patents claim an automated slide stainer used to stain tissue samples mounted on microscope slides. The staining facilitates microscope examination of the tissue samples. Ventana and CytoLogix are competitors in the automated slide stainer market.

CytoLogix filed suit against Ventana for infringement of the claims of the '061 patent, and later amended its complaint to assert infringement under the '693 patent. The district court construed disputed claim terms at the close of trial and provided them to the jury before closing arguments in the form of a glossary. The district court did not explain its reasons for reaching these constructions. With respect to the '061 patent the district court construed the term "heating station" and the phrase "separate electrical power connections being provided to said first and second heating elements."¹ The

¹ Claim 1 of the '061 patent contains the "heating station" limitation and reads:

1. A microscope slide stainer with random access slide staining capability comprising:
 - a moving platform;
 - a plurality of heating stations moving, with the moving platform, each heating station adapted to support at least one microscope slide bearing a biological sample and comprising a heating element; and
 - electronic control for heating the heating stations.

district court construed “heating station” to mean “a slide support and heating element capable of directly heating at least one microscope slide, but designed to hold and heat a number of slides by conductive heating, e.g., direct contact of a heated surface to a portion of the microscope slide to be heated.” (J.A. at 30.) It construed “separate electrical power connections being provided to said first and second heating elements” to mean that “each heating element has a separate connection to power and ground.”

(Id.)

The district court also construed various claim terms of the '693 patent. It construed “temperature controller” to mean “the switch, power amplifier or like device that directly adjusts the flow of electric power to one or more heating elements. The

Claim 8 of the '061 patent contains the “separate electrical power connections” limitation and reads:

8. A microscope slide stainer with random access slide staining capability comprising:
 - a moving platform adapted to carry microscope slides, said moving platform moving the slides to a dispensing station for adding liquid reagent to said slides;
 - a first heating element positioned on the moving platform, said first heating element adapted to move with the platform and to be located immediately adjacent to at least one microscope slide and having a first electrical power connection;
 - a second heating element positioned on the moving platform, said second heating element adapted to move with the platform and to be located immediately adjacent to at least one microscope slide and having a second electrical power connection, separate electrical power connections being provided to said first and second heating elements;
 - a motor drive capable of indexing said microscope slides adjacent to said dispensing station; and
 - electronic control for heating the first and second heating elements.

temperature controller includes a means for converting temperature data.”² (J.A. at 31.)

It construed “temperature controller electronic circuit” to mean “electronic components,

² Claims 1, 8, and 13 of the '693 patent contain the “temperature controller” limitation and read:

1. A microscope slide stainer with random access slide staining capability, comprising:
 - a moving platform adapted to support a plurality of microscope slides bearing biologic samples;
 - a plurality of heating element sets, each set having at least one heating element and each set heating at least one slide, each of said heating element sets having the capability of heating to different temperatures;
 - a temperature controller that regulates electrical power to said heating element sets, said temperature controller being mounted on the moving platform; and,
 - a user interface in communication with the temperature controller and through which a desired temperature for microscope slides is specified, said user interface being mounted off of the moving platform and communicating data to the temperature controller on the moving platform to regulate the electrical power to the heating element sets.
8. A microscope slide stainer with random access slide staining capability, comprising:
 - a plurality of microscope slides bearing biologic samples, positioned on a moving platform;
 - a plurality of heating element sets on the moving platform, each set having at least one heating element and each set capable of heating at least one slide, each capable of heating to a temperature distinct from the temperature of other heaters;
 - a temperature controller that regulates electrical power to said heating element sets, said temperature controller being mounted on the moving platform;
 - a user interface through which a desired temperature for each microscope slide is specified, said user interface being mounted off of the moving platform and said user interface comprising electronic circuitry which communicates data to the temperature controller on the moving platform to regulate the electrical power to the heating element sets; and,
 - a group of conductors, for providing an electrical connection between the temperature controller on the moving platform and the user

wiring, and printed circuit board which comprise the power amplifying device and decoder.”³ (Id.)

interface, the number of conductors in said group of conductors being less than the number of heater element sets.

13. A microscope slide stainer with random access slide staining capability comprising:

a moving platform adopted to support a plurality of microscope slides bearing biological samples;
a plurality of heating means, each for heating at least one slide, each of the heating means having the capability of heating to different temperatures;
temperature controller means for regulating electric power to the heating means, said temperature controller means being mounted on the moving platform; and
user interface means in communication with the temperature controller means for specifying a desired temperature for each microscope slide, said user interface means being mounted off of the moving platform and communicating data to the temperature controller on the moving platform to regulate the electrical power to the heating means.

³ Claim 10 of the '693 patent contains the “temperature controller electronic circuit” limitation and reads:

10. An automated device for preparation or incubation of biologic samples, comprising:

a moving platform adapted to support a plurality of biologic samples;
a plurality of heaters positioned on the moving platform so as to provide heat to one or more samples;
a computer that specifies the desired temperature for each heater, said computer being mounted off of the moving platform;
independent heating control to each of said heaters capable of heating the heaters to different temperatures, said heating control comprising:
a plurality of temperature controller electronic circuits mounted on the moving platform, each supplying electrical power to at least one heater; and
a data communication link between the computer and each of said temperature controller electronic circuits through which each temperature controller electronic circuit receives data from the computer so that each of said temperature controller electronic circuits decodes the temperature data and provides an appropriate

The jury found claims 1-3 and 5-15 of the '061 patent and claims 1-3 and 5-13 of the '693 patent infringed by Ventana and not invalid. The district court denied Ventana's motion for judgment as a matter of law or, in the alternative, a new trial. The district court thereafter entered a permanent injunction enjoining Ventana from infringing the asserted claims but did not reach the issue of damages. Ventana appeals.

DISCUSSION

We first consider our jurisdiction. Ventana states that we have jurisdiction pursuant to 28 U.S.C. § 1292(c)(2) because the district court entered a judgment that is final except for an accounting. CytoLogix disagrees, pointing out that the district court has not entered judgment. We agree that we do not have jurisdiction under § 1292(c)(2) because the district court has not entered a judgment with respect to liability. (J.A. at 1-6.) However, CytoLogix argues that we have jurisdiction pursuant to 28 U.S.C. § 1292(c)(1) because Ventana is appealing an order of the district court granting an injunction. We agree.

We review a district court's denial of a motion for judgment as a matter of law without deference, and the district court's denial of a motion for new trial for abuse of discretion. Acevedo-Delgado v. Rivera, 292 F.3d 37, 40 (1st Cir. 2002).

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This case primarily involves issues of claim construction. In construing patent claims we follow the methodology set forth in our recent en banc decision in Phillips. Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). We note that in this

amount of electrical power to each of said heaters so that each heater is heated to the computer-specified temperature.

case the parties agreed, contrary to the district court's wishes, not to have a Markman hearing, and that the claims were not construed until the close of evidence. This was not erroneous since we have held that the district court has considerable latitude in determining when to resolve issues of claim construction. See Jack Guttman, Inc. v. Kopykake Enters., Inc., 302 F.3d 1352, 1361 (Fed. Cir. 2002) ("District courts may engage in a rolling claim construction, in which the court revisits and alters its interpretation of the claim terms as its understanding of the technology evolves."). However, by agreement the parties also presented expert witnesses who testified before the jury regarding claim construction, and counsel argued conflicting claim constructions to the jury. This was improper, and the district court should have refused to allow such testimony despite the agreement of the parties. The risk of confusing the jury is high when experts opine on claim construction before the jury even when, as here, the district court makes it clear to the jury that the district court's claim constructions control.⁴

Although in this case there is no ground for reversal since there was no objection to the expert testimony as to claim construction, it appears that the conflicting expert views as to claim construction created confusion and may have led to a verdict of infringement with respect to the asserted claims of the '061 patent that was not supported by substantial evidence under the district court's claim construction. We nonetheless conclude that the verdict should be sustained as to these claims because,

⁴ Of course, if the district court has not yet construed the claims, testifying experts must make clear the claim constructions that they have assumed in their testimony. See, e.g., Frank's Casing Crew v. PMR Techs., LTD., 292 F.3d 1363 (Fed. Cir. 2002) (rejecting an expert's conclusion that a claim limitation was not satisfied because it was based on an incorrect claim construction).

although the district court's claim construction was in error, the evidence requires a verdict of infringement under the correct claim construction.⁵

Claims 1-3, 5-7, and 15 of the '061 patent include a "heating station" limitation. The district court adopted Ventana's construction of the term "heating station" as to the number-of-slides limitation and provided a "glossary" to the jury that defined "heating station" as "a slide support and heating element capable of directly heating at least one microscope slide, but designed to hold and heat a number of slides by conductive heating, e.g., direct contact of a heated surface to a portion of the microscope slide to be heated." (J.A. at 30 (emphasis added).)

Ventana urges on appeal that the district court's construction of "heating station" correctly requires each heating station to "hold and heat a number of slides." Under this construction, Ventana argues that the jury's verdict of infringement of claim 1 of the '061 patent is not supported by substantial evidence because each heating station of the accused devices holds and heats only a single slide. CytoLogix contends that the district court's construction of "heating station" is inconsistent with the plain language of the claims; that the correct construction covers devices in which only a single slide can be accommodated by each heating station; and that the evidence requires a verdict of infringement under this construction.⁶

⁵ The parties agreed that the jury's verdict as to infringement of the independent claims of the patents would apply also to the dependent claims. Thus, as to infringement, the jury considered only the independent claims.

⁶ CytoLogix also argues that substantial evidence supports the jury's verdict even under the district court's claim construction.

CytoLogix is correct that the district court's claim construction conflicts with the plain language of the claims. Claim 1 of the '061 patent recites a "heating station adapted to support at least one microscope slide," meaning that a heating station that supports only one slide falls within the scope of the claim. '061 patent, col. 11, ll. 2-3. Furthermore, claim 2 recites "[a] microscope slide stainer as claimed in claim 1 wherein each of the heating stations supports a single microscope slide." *Id.* at col. 11, ll. 6-8. Claim 2 would be rendered meaningless if each heating station had to support multiple slides. An interpretation of one claim that renders another claim meaningless is disfavored. In re Cruciferous Sprout Litig., 301 F.3d 1343, 1349 (Fed. Cir. 2002). There is nothing in the specification that suggests a different construction. See Phillips, 415 F.3d at 1314.

Ventana points to the prosecution history of the '061 patent as support for the district court's claim construction. It argues that CytoLogix disclaimed individual slide heating. Ventana misreads the prosecution history. A precursor claim to issued claim 1 had claimed "electronic control for heating the individual heating surfaces" of the heating stations. (J.A. at 2748.) The examiner rejected the claim under 35 U.S.C. § 112 because the specification did not enable one skilled in the art to make or use the claimed "electric [sic] control for heating the individual heating surface." (J.A. at 2756.) CytoLogix amended the claim such that it recited "electronic control for the heating stations" rather than the "individual heating surfaces." (J.A. at 2839.) CytoLogix also explained in its response that "[c]laims 1-9 were rejected under 35 U.S.C. § 112, second paragraph, with respect to the recitation of individual heating surfaces heated or controlled individually. That feature is no longer recited in the claims." (J.A. at 2841.)

The exchange during prosecution had nothing to do with the number of slides a heating station may accommodate; it only established that if a heating station accommodates more than one slide, all of the slides on that heating station must be heated as a group and not individually.

Thus, the claim term “heating station” is not limited to a device that holds and heats a number of slides. The term “heating station” is properly construed to mean “a slide support and heating element capable of directly heating at least one microscope slide by conductive heating, e.g., direct contact of a heating surface to a portion of the microscope slide to be heated.”

Although the district court erroneously construed “heating station,” a new trial is not required because the district court’s instruction to the jury did not constitute prejudicial error. “[T]o warrant a new trial . . . the erroneous jury instruction [must have been] in fact prejudicial. When the error in a jury instruction could not have changed the result, the erroneous instruction is harmless.” Ecolab Inc. v. Paraclipse, Inc., 285 F.3d 1362, 1374 (Fed. Cir. 2002) (internal quotation marks omitted); see also Seachange Int’l, Inc. v. C-COR Inc., 413 F.3d 1361, 1381 (Fed. Cir. 2005); Weinar v. Rollform Inc., 744 F.2d 797, 808 (Fed. Cir. 1984). Prejudicial error only exists if “there was sufficient evidence at trial to support a finding of [non]-infringement under a correct instruction.” Ecolab, 285 F.3d at 1374. Although infringement under the district court’s erroneous claim construction was debatable, infringement under the proper construction was not.⁷ This was so because there was no dispute that the heating stations of the accused

⁷ See also Exxon Chem. Patents, Inc. v. Lubrizol Corp., 64 F.3d 1553, 1560 (Fed. Cir. 1995) (jury verdict reversed where insufficient evidence to support verdict under correct construction).

devices supported and heated at least one slide. We sustain the jury's verdict of infringement concluding that the "heating station" limitation of claims 1-3, 5-7, and 15 of the '061 patent is satisfied.

II

Ventana next urges that the verdict of infringement with regard to claim 8-15 of the '061 patent should be set aside because the district court erred in its construction of "separate electrical power connections being provided to said first and second heating elements" in those claims.⁸ The district court construed the phrase to mean "each heating element has a separate connection to power and ground." (J.A. at 30.) The district court's construction did not require the separate connections to be off the moving platform. Ventana argues that its devices would not infringe if the phrase were construed to include an "off the moving platform" limitation.

The language of claim 8 makes no reference to an "off the moving platform" limitation. Claim 8 of the '061 patent reads:

8. A microscope slide stainer with random access slide staining capability comprising:
 - a moving platform adapted to carry microscope slides, said moving platform moving the slides to a dispensing station for adding liquid reagent to said slides;
 - a first heating element positioned on the moving platform, said first heating element adapted to move with the platform and to be located immediately adjacent to at least one microscope slide and having a first electrical power connection;
 - a second heating element positioned on the moving platform, said second heating element adapted to move with the platform and to be located immediately adjacent to at least one microscope slide and having a second electrical power connection, separate electrical power connections being provided to said first and second heating elements;

⁸ Claim 15 includes both the "heating station" and "separate electrical power connections" limitations.

a motor drive capable of indexing said microscope slides adjacent to
said dispensing station; and
electronic control for heating the first and second heating elements.

There is no requirement in the claim that the electrical power connections be “off the moving platform.” Furthermore, the preferred embodiment of the invention described in the specification has electrical power connections that are on the moving platform. See '061 patent col. 5, l. 50-col. 6, l. 4 & Fig. 7. We have previously held that “[a] claim construction that excludes a preferred embodiment . . . ‘is rarely, if ever, correct.’” SanDisk Corp. v. Memorex Prods., Inc., 415 F.3d 1278, 1285 (Fed. Cir. 2005) (quoting Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996)). Ventana’s tortured arguments based on the specification and prosecution history do nothing to undermine the plain language of the claims and the fact that the preferred embodiment has electrical power connections on the moving platform. The district court correctly construed the phrase. We sustain the jury verdict concluding that the “separate electrical power connections” limitation of claims 8-15 of the '061 patent is satisfied.

Thus the jury’s verdict of infringement of the asserted claims of the '061 patent is sustained subject to the validity issue discussed in the next section.

III

Ventana argues alternatively that it is entitled to a new trial on the issue of the invalidity of claims 1-3, 5-7, and 15 of the '061 patent.⁹ The district court construed the disputed claim terms and provided its constructions to the jury before closing arguments. Ventana could and did argue that the claims were invalid under the district

⁹ For purposes of invalidity the parties did not agree that the independent claims were representative of the dependent claims. The jury considered each claim separately.

court's claim construction, but does not now appeal the jury's verdict finding the claims not invalid under the district court's claim construction. Ventana instead argues that the construction of "heating station" adopted by the district court precluded it from arguing (and the jury from deciding) whether claims 1-3, 5-7, and 15 of the '061 patent were invalid for lack of written description, or invalid as anticipated or obvious, under what we now conclude is the correct claim construction.¹⁰ Accordingly, Ventana argues for a new trial on the issue of invalidity. CytoLogix argues that Ventana did not preserve invalidity issues at trial and that it did not present substantial evidence of invalidity due to lack of written description.

Where arguments with respect to infringement or invalidity have been presented but rendered moot by the claim construction adopted by the district court, a new trial may in some circumstances be appropriate. See Exxon Chem. Patents, Inc. v. Lubrizol Corp., 137 F.3d 1475, 1482 (Fed. Cir. 1998). Here we conclude that issues of written description and anticipation do not warrant a new trial, but that a new trial may be appropriate on obviousness.

A review of the record shows that Ventana initially raised three theories of invalidity regarding the '061 patent: lack of written description, anticipation, and obviousness. Ventana voluntarily dropped the anticipation theory before the district court adopted its claim construction. CytoLogix is thus correct that Ventana's claim of anticipation has been waived. However, Ventana did present evidence regarding the written description and obviousness theories before the claims were construed by the

¹⁰ Claims 1-3, 4-7, and 15 are the only asserted claims containing the "heating station" limitation. Claims 8-14 do not contain the "heating station" limitation

district court. Those theories were preserved. Ventana introduced evidence to support a jury verdict of invalidity under the correct claim construction. Substantial evidence of invalidity must meet certain minimum requirements; “[g]eneral and conclusory testimony . . . does not suffice as substantial evidence of invalidity.” Koito Mfg. Co. v. Turn-Key-Tech, LLC, 381 F.3d 1142, 1152 (Fed. Cir. 2004). Ventana relied on the testimony of its expert, William Richards, for evidence of lack of written description. That testimony is general and conclusory, consisting of little more than the statement “I believe that the claim would be invalid, because I can’t find any support for [the claim] in the specification.” (J.A. at 1982-83.) We hold that Ventana did not present substantial evidence of invalidity for lack of written description, and that there is no basis for a new trial on the issue of invalidity for lack of written description.

Ventana also introduced evidence of obviousness through Mr. Richards. The testimony concerning obviousness was far more detailed than the testimony concerning written description, considering at length the prior art and the issue of motivation to combine. That evidence may have constituted substantial evidence that would support a jury verdict of obviousness under the correct claim construction. We leave to the district court the question whether Ventana is entitled to a new trial on obviousness. We thus hold that the obviousness issue was properly preserved and remand for the district court to consider a new trial on the issue of obviousness under the correct claim construction.¹¹

and any invalidity arguments with respect to such claims are not appealable because no other new claim constructions are adopted on appeal.

¹¹ We reject CytoLogix’s argument that this issue was not preserved on appeal. It is not necessary that contingent arguments for a new trial issue be separately briefed. See Exxon Chem., 137 F.3d at 1482 (“An appellee cannot be expected to

While we uphold the verdict of infringement with respect to the claims of the '061 patent, and sustain the injunction insofar as it enjoins infringement of claims 8-14, we vacate the injunction with respect to claims 1-3, 5-7, and 15 of the '061 patent and remand for further proceedings.

IV

Ventana also challenges the jury verdict of infringement of claims 1-3 and 4-9 of the '693 patent.¹² Ventana argues that the claims require that the “temperature controller” must communicate with the off-carousel computer. It urges that in the accused devices the power drivers are the temperature controller and that the communication limitation is not satisfied because a microprocessor (“PIC”) mounted on the carousel of the accused devices intervenes between the power drivers and the off-carousel computer. CytoLogix contends that the power drivers and the PIC together are the temperature controller and that, because the PIC communicates with the off-platform computer, the communication limitation is met.

The district court construed “temperature controller” to mean “the switch, power amplifier or like device that directly adjusts the flow of electric power to one or more heating elements. The temperature controller includes a means for converting temperature data.” (J.A. at 31.) Neither party objected to the instructions at trial. Under these circumstances “the issue [is] limited to the question of whether substantial evidence supported the verdict under the agreed instruction.” See Hewlett-Packard Co.

preserve all issues that might conceivably give rise to a motion for a new trial, including those issues unrelated to the subject of the appeal.”).

¹² As noted above, the parties agreed that the verdict of infringement with respect to independent claims would also apply to the dependent claims.

v. Mustek Sys., Inc., 340 F.3d 1314, 1320-21 (Fed. Cir. 2003) (“When issues of claim construction have not been properly raised in connection with the jury instructions, it is improper for the district court to adopt a new or more detailed claim construction in connection with the JMOL motion. On JMOL, the issue here should have been limited to the question of whether substantial evidence supported the verdict under the agreed instruction.”). The question is thus whether the testimony presented by CytoLogix through its expert witnesses constitutes substantial evidence of infringement under the district court’s definitions of the claim terms.

Ventana argues that there is no substantial evidence to support a verdict of infringement with respect to claims 1-3 and 4-9. Since neither party objected to the instruction, we look to see whether there is substantial evidence under the agreed instruction. We read the district court’s claim construction of “temperature controller” to require both a “switch, power amplifier or like device” and a “means for converting temperature data.”¹³ (J.A. at 31.) The undisputed evidence was that the power driver of the accused device by itself was a “switch, power amplifier or similar device.” CytoLogix points to testimony supporting the proposition that the PIC is the “means for converting temperature data,” such that the combination of the power drivers and the PIC satisfy the district court’s definition of temperature controller. (See, e.g., J.A. 1034-37; 1111-12.) We find that CytoLogix presented substantial evidence supporting the verdict of infringement with respect to claims 1 and 8.

¹³ This construction is supported by the specification of the patent, which states that the temperature controller may include a microprocessor. ‘693 patent, col. 11, ll. 57-59 (“As yet another potential design is that each temperature control board **79** could have its own microprocessor.”).

Second, Ventana argues that there is no substantial evidence to support a verdict of infringement with respect to claims 10-12. Again, since neither party objected to the instruction, we look to see whether there is substantial evidence under the agreed instruction. The language of claim 10 is somewhat different than the language of claims 1 and 8. Claim 10 requires “temperature controller electronic circuits.” ’693 patent, col. 13, l. 24. The district court’s instruction defined the phrase to mean “electronic components, wiring, and printed circuit board which comprise the power amplifying device and decoder.” (J.A. at 31.) CytoLogix’s experts, David Gessel and Alexander Slocum, testified that these claim limitations were satisfied in the accused device. (See, e.g., J.A. at 1113-14; 1538-40.) Thus we conclude that the verdict of infringement with respect to claim 10-12 was supported by substantial evidence.

Third, Ventana argues that CytoLogix failed to present substantial evidence of infringement of claim 13 of the ’693 patent because it did not conduct a structural analysis of means-plus-function limitations in that claim.¹⁴ The “temperature controller” limitation of claim 13 is a means-plus-function limitation as defined by 35 U.S.C. § 112, ¶ 6. Infringement of a means-plus-function limitation “requires that the relevant structure in the accused device . . . be identical or equivalent to the corresponding

¹⁴ Ventana also argues that the communication limitations of the asserted claims of the ’693 patent are not met. All of the claims require communication between the off-carousel computer and the “temperature controller” or “temperature controller electronic circuit.” Ventana’s argument rests solely upon the notion that the PIC intervenes between the off-carousel computer and the power drivers, and that communication with the PIC is not sufficient to satisfy the communication limitations. We reject this argument because, as discussed above, we hold that the district court’s unopposed constructions of “temperature controller” and “temperature controller electronic circuit” are broad enough to include the PIC, and that communication with the PIC may therefore satisfy the communication limitations of the claims.

structure in the specification.” Odetics, Inc. v. Storage Tech. Corp., 185 F.3d 1259, 1267 (Fed. Cir. 1999). To establish infringement under § 112, ¶ 6, it is insufficient for the patent holder to present testimony “based only on a functional, not a structural, analysis.” Alpex Computer Corp. v. Nintendo Co., 102 F.3d 1214, 1222 (Fed. Cir. 1996). Here, CytoLogix failed to identify the structure in the specification that is the “temperature controller means” and compare it to the structure of the accused device. Accordingly, because CytoLogix failed to present substantial evidence of infringement of claim 13 of the '693 patent, the jury verdict of infringement of claim 13 must be reversed.

CONCLUSION

We sustain the injunction as to claims 8-14 of the '061 patent. We vacate the injunction with respect to claims 1-3, 5-7, and 15, and remand to the district court to consider whether a new trial should be granted on the issue of obviousness with respect to claims 1-3, 5-7, and 15 of the '061 patent. We uphold the injunction with respect to claims 1-3 and 5-12 of the '693 patent. We reverse as to claim 13.

VACATED IN PART, REVERSED IN PART, AFFIRMED IN PART, and REMANDED

COSTS

No costs.