

# **United States Court of Appeals for the Federal Circuit**

2008-1466

AGILENT TECHNOLOGIES, INC.,

Plaintiff-Appellant,

v.

AFFYMETRIX, INC.,

Defendant-Appellee.

Thomas H. Jenkins, Finnegan, Henderson, Farabow, Garrett & Dunner, L.L.P., of Washington, DC, argued for plaintiff-appellant. With him on the brief was Tina E. Hulse, of Palo Alto, California.

Stephen C. Holmes, Dewey & LeBoeuf LLP, of East Palo Alto, California, argued for defendant-appellee. With him on the brief were Barbara A. Caufield, and Michael J. Malecek.

Appealed from: United States District Court for the Northern District of California

Judge James Ware

# United States Court of Appeals for the Federal Circuit

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Plaintiff-Appellant

v.

AFFYMETRIX, INC.,

Defendant-Appellee

Appeal from the United States District Court for the Northern District of California in Case No. 06-CV-05958, Judge James Ware.

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DECIDED: June 4, 2009

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Before MAYER, RADER, Circuit Judges, and POSNER, Circuit Judge.\*

RADER, Circuit Judge.

The United States District Court for the Northern District of California reviewed an interference action that Agilent Technologies, Inc. (Agilent) brought under 35 U.S.C. § 146 against Affymetrix, Inc. (Affymetrix). The district court sustained the decision of the Board of Patent Appeals and Interferences (the Board) and awarded priority to Affymetrix. Agilent Techs. v. Affymetrix, Inc., No. C-06-05958 (N.D. Cal. June 13, 2008) (SJ Order). Because the district court erred with regard to claim construction, improperly denied Agilent's motion for summary judgment with regard to written

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\* The Honorable Richard A. Posner, Circuit Judge, United States Court of Appeals for the Seventh Circuit, sitting by designation.

description under § 112 ¶ 1, and improperly granted Affymetrix's cross-motion on the same issue, this court reverses.

I.

This case arises out of an interference proceeding, No. 105,285, between Agilent and Affymetrix. The claims at issue originated in Agilent's "Schembri" patent, U.S. Patent No. 6,513,968, which claims priority to an application filed August 21, 1998.

After Agilent's Schembri patent issued on February 4, 2003, Affymetrix, believing it had earlier invented the claimed methods, copied the Schembri claims into its "Besemer" application, U.S. Patent Application No. 10/619,244, to provoke an interference. The Besemer application claims priority, through a long string of continuations, to an application filed June 7, 1995. The Board declared an interference on February 16, 2006 to determine which party had priority of inventorship. Because the Besemer application claims the benefit of an earlier filing date, the Board declared Affymetrix the senior party to the interference under 37 C.F.R. § 2.96. Agilent thus had the burden to show prior entitlement to its patented technology.

The disputed claims pertain to "microarray hybridization," a technique for performing multiple genetic analyses on a small fluid sample. Using this technique, a testor can perform millions of genetic tests in a single small assay. A microarray is a solid substrate (e.g., a glass slide) bearing millions of molecular probes. These probes are generally short DNA sequences that bind (hybridize) to specific targets. To conduct a microarray test, the testor introduces a fluid sample containing the genetic material of interest onto the microarray surface. The fluid contacts the probes. The probes then bind to their fluid targets, revealing the presence of those hybridized targets on the

microarray. To achieve proper hybridization results, the testor must make sure that the fluid contacts the entire microarray surface. The disputed invention focuses primarily upon the method of mixing the fluid for thorough contact with the microarray surface.

The interfering subject matter in this appeal is claim 20 of the Schembri patent, or claim 66 of the Besemer application. The invention claims a method for mixing a fluid sample during hybridization:

A method comprising:

providing a first substrate and a second substrate having inner surfaces that define a closed chamber therebetween, said chamber adapted to retain a quantity of fluid so that the fluid is in contact with both inner surfaces, and wherein at least one of said inner surfaces is functionalized with polynucleotides, polypeptides, or polysaccharides;

introducing a fluid containing a plurality of components into the closed chamber so as to provide a quantity of fluid therein in contact with both inner surfaces;

providing a bubble in the fluid; and

moving a bubble within the fluid to result in mixing.

Schembri Patent col.10 ll.33-45, Besemer Application at 39.

#### A. Schembri's Disclosure of Fluid Mixing

Agilent's Schembri patent discloses a method of conducting a hybridization reaction in a closed chamber. The method forms a bubble in the fluid, and then moves the bubble to cause mixing. According to the Schembri specification, conventional mixing methods (rapidly shaking or rocking fluid in a container) do not adequately mix (or test) assays with small fluid samples. In these situations, where the fluid forms a mere film with a thickness of a few microns, the capillary strength of the fluid often exceeds the forces generated by shaking or rocking. In that case, incomplete mixing

compromises the rate, extent, and percentage yield of the hybridization reaction. Schembri claims a new method of mixing fluid via nucleation of bubbles within the film of liquid.

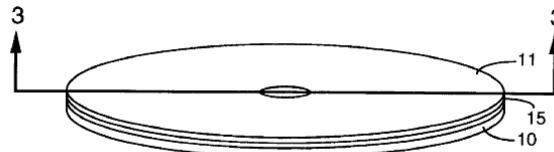


FIG. 1

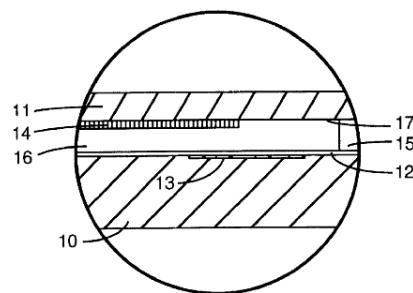


FIG. 4

Figure 1, above, shows an apparatus with a closed chamber sandwiched between a first substrate 10 and second substrate 11. As seen in the cross-sectional view of Figure 4, DNA probes are attached to the inner surface 12 of substrate 10. The second substrate 11 forms a closed reaction chamber due to the seal 15 between the surfaces. The testor then introduces a fluid sample with DNA targets into the closed chamber 16. The invention then forms a bubble that moves in response to heat resistors 13 inside the chamber. A controller creates this temperature gradient by systematically switching on and off. These temperature changes cause the bubble to move and mix the fluid sample in the closed chamber.

#### B. Besemer's Disclosure of Fluid Mixing

Affymetrix's Besemer application, entitled "Bioarray Chip Reaction Apparatus and its Manufacture," describes microarray chips and "chip packages" onto which chips are mounted. The chip package serves as a "sealed thermostatically controlled chamber in which fluids can easily be introduced, a practical medium for sequencing by

hybridization . . . .“ Besemer Application at 2. Figure 3 illustrates a chip packaging device:

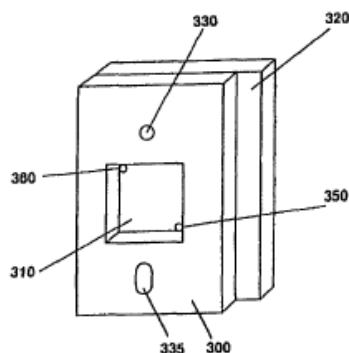


FIG. 3

The invention mounts a microarray chip above the cavity 310. Inlets 350 and 360 communicate with cavity 310 such that “fluids are circulated through the cavity via inlets 350 and 360.” Id. at 9.

The Besemer application discloses three embodiments, called “agitation systems,” for mixing fluid through the cavity during hybridization. Figures 28 and 30 represent particular embodiments that circulate fluid through the chip package. For purposes of this appeal, these “circulator” embodiments are not materially different. The embodiment in Figure 28 illustrates this mixing technology:

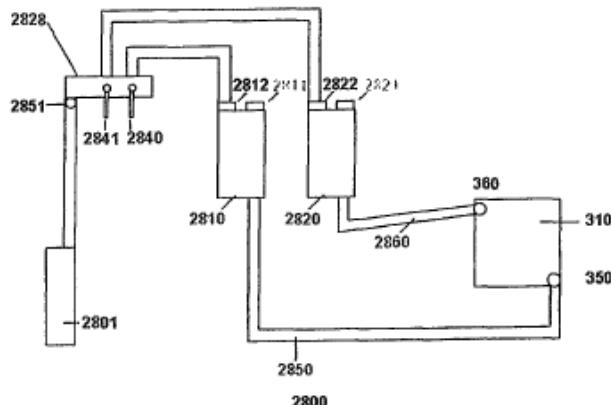


FIG. 28

The hybridization chip and cavity 310 attach to containers 2810 and 2820. These containers hold fluid targets for hybridization with probes on the chip. Agitator 2801 holds a gas, e.g., nitrogen. Using ports, vents, and valves, the agitator injects gas into the containers in an alternating manner, thereby forcing fluid into and out of the cavity 310. As the fluid flows in and out of the cavity 310, the targets and probes mix to effect hybridization. Notably, in the discussion of this embodiment, Besemer teaches that “[t]he bubbles formed by the N<sub>2</sub> agitate the fluid as it circulates through the system.” Id. at 28.

The embodiment in Figure 29, the “vortexer” system, accomplishes fluid mixing in a different manner:

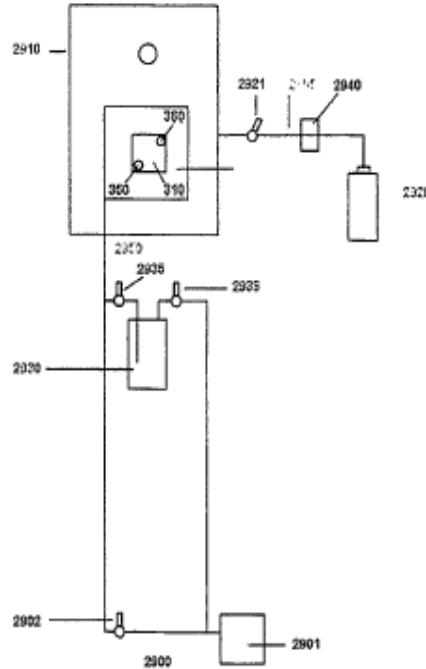


FIG. 29

This embodiment mounts a hybridization chip package on vortexer 2910. Container 2930 then fills with fluid containing targets. At that point, various valves open to allow nitrogen gas from 2901 to enter container 2930, thereby forcing fluid into the cavity 310.

The valves then seal fluid in the cavity and the vortexer vibrates the chip package “similar to a paint mixer” at 3000 cycles per minute. Id. at 29. This motion mixes the targets in the fluid, completing the hybridization reaction.

## II.

Before the Board, Agilent filed a single substantive preliminary motion challenging the validity of the copied claims on the grounds that the Besemer application did not describe the invention adequately under § 112 ¶ 1 to show actual possession of the bubble-mixing invention. After a hearing, the Board ruled that Agilent did not prove that the Besemer application lacked adequate written description to support the count (the interfering claims). Schembri v. Besemer, Interference No. 105,285 (B.P.A.I. June 28, 2006) (Board Decision). Because it found that the Besemer application showed support for the claimed invention, the Board awarded priority to Affymetrix’s application and cancelled the contested claims of Agilent’s Schembri patent.

Agilent sought review of this decision by filing a complaint in the Northern District of California under 35 U.S.C. § 146. The parties submitted new expert reports and testimony from their respective expert witnesses. In April 2008, the district court held a claim construction hearing. The court also entertained cross motions for summary judgment on the written description issue. Soon after, the district court granted Affymetrix’s motion for summary judgment that the Besemer application satisfies the written description requirement, thereby affirming the Board. The instant appeal challenges the trial court’s claim construction and written description decisions. This court has jurisdiction over Agilent’s appeal under 28 U.S.C. § 1295(a)(1).

### III.

This court must first decide as a legal matter which specification to consult when construing a claim whose written description is challenged in an interference. The district court construed the disputed claims in light of the host application whose written description (possession of the invention at the time of invention) was challenged – in this case, the Besemer specification. SJ Order, slip op. at 7. Agilent counters that the proper reference point for claim construction was the Schembri specification, the disclosure from which the claims originated. Because this question presents a matter of law, this court reviews the district court's decision without deference. Gould v. Quigg, 822 F.2d 1074, 1077 (Fed. Cir. 1987).

To decide which specification informs the interpretation of the contested claims, this court must examine two of its prior decisions, In re Spina, 975 F.2d 854 (Fed. Cir. 1992), and Rowe v. Dror, 112 F.3d 473 (Fed. Cir. 1997). In Spina, the applicant copied a claim from the “Barron” patent to provoke an interference. The Board, in considering whether Spina’s specification contained an adequate written description of the claim clause at issue, viewed the claim in light of the Barron disclosure, from which the claim had been copied. This court agreed with that approach: “When interpretation is required of a claim that is copied for interference purposes, the copied claim is viewed in the context of the patent from which it was copied.” Spina, 975 F.2d at 856.

In Rowe v. Dror, Rowe copied several claims from the Dror patent to provoke an interference. During the motions period before the Board, Dror filed a motion seeking judgment against Rowe on the ground that a third party patent anticipated some of Rowe’s claims corresponding to the interference count. On appeal from a holding of

invalidity, this court discussed which specification – Rowe’s or Dror’s – should be used to interpret Rowe’s claims:

[37 C.F.R.] section 1.633(a) allows the PTO to consider the novelty or non-obviousness of each application’s claims as if the application stood alone. In this posture, the PTO properly interprets the claim in light of its host disclosure, just as it would during ex parte prosecution. Thus, this court looks to the Rowe application to determine the meaning of the phrase at issue.

Rowe, 112 F.3d at 479. Recognizing that this result was at odds with Spina, this court expressly distinguished the two cases:

In Spina, this court considered whether an applicant was eligible to copy a patentee’s claim and thereby challenge priority of invention, a question that turned on whether the copying party’s specification adequately supported the subject matter claimed by the other party. This court held, in that context, that a copied claim is interpreted in light of its originating disclosure. This Spina rule sought to ensure that the PTO would only declare an interference if both parties had a right to claim the same subject matter. However, that rule does not apply in cases, such as this one, where the issue is whether the claim is patentable to one or the other party in light of prior art. In this posture, the PTO and this court must interpret the claim in light of the specification in which it appears.

Id.

This case calls for application of the Spina rule, because the question is “whether the copying party’s specification [Besemer] adequately supported the subject matter claimed by the other party [Schembri].” Id. Stated more directly, does Besemer have adequate basis to copy Schembri’s claim and thereby challenge Schembri’s priority of invention? This case does not present the Rowe situation, “where the issue is whether the claim is patentable to one or the other party in light of prior art.” Id.

Affymetrix places great emphasis on the language of 37 C.F.R. § 41.200(b) (2004), which provides: “A claim shall be given its broadest reasonable construction in light of the specification of the application or patent in which it appears.” This regulation

was not in effect at the time of the Spina decision, and thus, per Affymetrix, Spina cannot stand in the way of following the plain language of Rule 200 today.

To the contrary, Rowe explicitly recognized that administrative regulations cannot trump judicial directives. In considering the effect of Rule 200's substantially similar predecessor (37 C.F.R. § 1.633(a) (1996)) on the rule from Spina, this court stated: "This court does not accept the PTO's statement that it can 'administratively set aside the judicially created rule of In re Spina.' Judicial precedent is as binding on administrative agencies as are statutes." Id. at 479 n.2 (internal citations omitted).

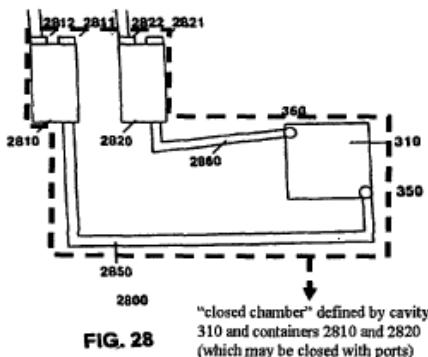
Indeed, Rowe's differentiating characteristic was that it involved a situation, unlike Spina, where the issue was whether the claim was "patentable to one or the other party in light of prior art." Id. at 479. In such situations, where the PTO assesses the viability of an applicant's claims in the face of § 102 or § 103 challenges, the proper reference point for determining claim meaning is the host disclosure, just as in ex parte prosecution. By contrast, as in the instant case, where the PTO must assess whether both parties have a right to claim the same subject matter, the claim construction analysis properly occurs in the context of the specification from which the claims were copied.

To be clear, as this court explained in Rowe, when a party challenges written description support for an interference count or the copied claim in an interference, the originating disclosure provides the meaning of the pertinent claim language. When a party challenges a claim's validity under § 102 or § 103, however, this court and the Board must interpret the claim in light of the specification in which it appears. Thus, the

district court erred in construing claim language in light of the host Besemer application, rather than the originating Schembri disclosure.

#### IV.

The district court construed the term “a closed chamber . . . adapted to retain a quantity of fluid” to mean “an enclosed cavity, or some other enclosure or system of enclosures, which is capable of being sealed or set apart from its surroundings to retain a quantity of fluid.” SJ Order, slip op. at 12. The district court arrived at this construction by referring to Figure 28 of the Besemer application. The district court created the following markup of Figure 28 to demonstrate its understanding of the “closed chamber”:



Id. at 20. As the above figure shows, the district court concluded that the claimed closed chamber includes not only the cavity 310, but also “containers 2810 and 2820, and associated tubes.” Id. at 18. Agilent challenges two aspects of the district court’s construction.

##### A.

First, Agilent argues that the district court erroneously interpreted “a closed chamber” to mean a “system of enclosures.” According to Agilent, the term is defined by the language of the claim itself, and should mean “the space between the inner

surfaces of the first and second substrate, wherein at least one of the inner surfaces is functionalized.” Appellant’s Br. 43.

This court reviews a district court’s claim construction without deference. Cybor Corp. v. FAS Techs., Inc., 138 F.3d 1448, 1451 (Fed. Cir. 1998) (en banc). This court generally assigns claim terms their ordinary and customary meanings, according to the customary understanding of a person of ordinary skill in the art who reads them in the context of the intrinsic record. See Phillips v. AWH Corp., 415 F.3d 1303, 1312-13 (Fed. Cir. 2005) (en banc). “[T]he claims themselves provide substantial guidance as to the meaning of particular claim terms.” Id. at 1314.

The claim language in this case makes the district court’s definition dubious. The district court’s definition includes a “system of enclosures.” The claim itself recites a closed chamber “define[d]” by “a first substrate and a second substrate having inner surfaces.” Thus, the claim requires that the chamber be bounded by two discrete substrates. The chamber is not a nebulous space that could ambiguously span a “system of enclosures.” Instead, it is an enclosure explicitly defined by two surfaces.

The specification further impeaches the trial court’s definition. As discussed above, the district court erred by looking to the Besemer specification to derive this claim term’s meaning. Because the specification “is the single best guide to the meaning of a disputed term,” Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996), this was an error of no small consequence. The “closed chamber . . .” term should have been construed in light of Schembri’s specification, which consistently uses this term to refer simply to the space between a first and second substrate. As the Summary of Invention section states:

The invention, in one embodiment, is an apparatus for mixing a film of fluid, particularly a chemical, biochemical, or biological fluid which typically comprises a reaction mixture, the apparatus comprising a first substrate having an inner surface and a substantially parallel second substrate having an inner surface that defines a closed chamber therebetween. The closed chamber is adapted to retain a quantity of fluid so that the fluid is in contact with both inner surfaces.

Schembri Patent col.2 ll.44-52 (emphasis added). Indeed, the closed chamber is “define[d]” by two substantially parallel substrates with inner surfaces. Id. The Schembri specification provides no indication that a closed chamber is a “system of enclosures.” Rather, it is an enclosure.

Consistent with the disclosure’s focus on a method of mixing precise quantities of fluid, Schembri indicates at many points that the closed chamber is an interstitial space defined by two surfaces in which nucleated bubbles move in response to a temperature gradient to achieve mixing. See, e.g., id. col.6 ll. 36-38 (“a second substrate 11 . . . is placed on top of the seal where the substantially parallel substrates define a closed chamber”); id. col.6 ll.38-41 (“The closed chamber may be a micron to several millimeters in thickness, preferably from about 5 microns to about 100 microns in thickness.”); id. col.7 ll.9-15 (“The apparatus having closed edges, shown in FIG. 3, may additionally include a seal 15 between the two opposing inner surfaces . . . The apparatus preferably includes an opening in one of the substrates or in the seal for introducing fluid into the closed chamber.”).

Moreover, the district court’s interpretation ignores, or at the least frustrates, the explicit requirement that “at least one of said inner surfaces is functionalized with [probe materials].” This language requires that probes attach to at least one (possibly both) of the chamber’s two substrate surfaces for hybridization. Under the district court’s

“system” definition, however, it makes little sense to speak of a hybridization chamber with only two microarray chamber substrates, let alone functionalizing “at least one” of these two substrates. In this context, if a chamber really means several chambers, the Schembri specification provides no guidance as to where, amongst the several chambers, the first and second substrates are located. Indeed, the Schembri patent uniformly teaches that a closed chamber is simply an enclosure formed by two substrates, at least one of which is functionalized. Thus, for various reasons, this court rejects the district court’s expansive interpretation of “closed chamber.” Instead the language of the claim and specification defines the chamber.

B.

Agilent further argues that the district court erred by construing a “closed chamber . . . adapted to retain a quantity of fluid” to mean a chamber that is “capable of being sealed or set apart from its surroundings to retain a quantity of fluid.” As per Agilent, a “closed chamber” is a “chamber from which there is no egress of fluid.” Appellants’ Br. at 47.

Again, this court finds error in the district court’s construction. A “closed chamber . . . adapted to retain a quantity of fluid” must mean something different than just a “chamber . . . adapted to retain a quantity of fluid.” Otherwise, the word “closed” becomes superfluous. See 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.”); Mangosoft, Inc. v. Oracle Corp., 525 F.3d 1327, 1330-31 (Fed. Cir. 2008) (rejecting claim construction that “ascribes no meaning to the term . . . not already implicit in the rest of the claim.”). At best, the

district court's construction equates the term "closed" with "closable," contrary to the plain language of the claim.

Notably, the district court explicitly recognized that the ordinary meaning of "closed" in the context of a fluid retention chamber is simply "not open" or "sealed." SJ Order, slip op. at 11. A sealed chamber does not allow fluid to escape. However, the district court compromised this ordinary meaning out of a need to harmonize its own assumptions that a) the claims should be construed in light of the Besemer application, and b) a "closed chamber" can be a "system of enclosures." No doubt, the various enclosures (containers, valves, channels, etc.) of Besemer's agitation systems are not always closed or sealed. But, as discussed above, Schembri, not Besemer, is the proper reference point for claim construction, and a "closed chamber" is not a system of enclosures.

In Schembri's disclosure, the closed chamber is not merely capable of being set apart from its surroundings – it is in fact set apart. Indeed, the hybridization chamber, once closed or sealed, allows no fluid to escape. At column 6, Schembri teaches that "a seal 15 can be attached to the outer periphery of the substrate, thus creating a chamber for the fluid with a defined thickness." Schembri Patent col.6 ll.28-30. At this point in the explanation, the patent describes only a "chamber" that is capable of retaining a film of fluid. Next, however, "a second substrate 11, or a simple glass cover slip is placed on top of the seal where the substantially parallel substrates define a closed chamber 16." Id. col.6 ll.36-38 (emphasis added). Thus, whereas a hybridization "chamber" is formed by attaching a seal to the substrate, that chamber becomes "closed" once another substrate is placed over the seal. This teaching of

closing a chamber is repeatedly discussed in each example provided in Schembri. See id. col.7 ll.49-53; col.8 ll.20-25; col.8 ll.53-55.

Thus, this court reverses the district court's construction, which was not grounded in the right disclosure and did not honor the customary meaning of the claim language to one of skill in the art. The proper meaning of a "closed chamber . . . adapted to retain a quantity of fluid" is "an enclosed cavity defined by the inner surfaces of the first and second substrates, from which there is no egress of fluid."

## V.

The next issue is whether the district court properly granted Affymetrix's motion for summary judgment that the Besemer application shows adequate possession of the claimed invention at the time of invention, the written description requirement of § 112 ¶ 1. This court reviews a district court's grant of summary judgment without deference. Monsanto Co. v. Scruggs, 459 F.3d 1328, 1344 (Fed. Cir. 2006). Summary judgment is appropriate "if the pleadings, depositions, answers to interrogatories, and admissions on file, together with affidavits, if any, show that there is no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law." Fed. R. Civ. P. 56(c). On appeal from a grant of summary judgment, this court construes the facts in the light most favorable to the non-movant, here Agilent. Bose Corp. v. JBL, Inc., 274 F.3d 1354, 1358 (Fed. Cir. 2001).

The written description doctrine prohibits new matter from entering into claim amendments, particularly during the continuation process. As this court stated in In re Wright:

When the scope of a claim has been changed by amendment in such a way as to justify an assertion that it is directed to a different invention than

was the original claim, it is proper to inquire whether the newly claimed subject matter was described in the patent application when filed as the invention of the applicant. That is the essence of the so-called “description requirement” of § 112, first paragraph.

866 F.2d 422, 424 (Fed. Cir. 1989) (emphasis in original). Adequate written description means that the applicant, in the specification, must “convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the [claimed] invention.” Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). Satisfaction of the written description requirement is a question of fact. Conservolite, Inc. v. Widmayer, 21 F.3d 1098, 1100 (Fed. Cir. 1994).

Patent applications do not enjoy the statutory presumption of validity found in 35 U.S.C. § 282. Thus, Agilent’s burden of proving a lack of written description in Affymetrix’s Besemer application is a simple preponderance of the evidence. Eli Lilly & Co. v. Aradigm Corp., 376 F.3d 1352, 1365 (Fed. Cir. 2004).

#### A.

Before addressing the substantive merits of the district court’s decision, this court will first address Agilent’s contention that the district court erred by adopting the incorrect standard of review for considering certain new evidence that had not been before the Board.

Under 35 U.S.C. § 141, a party to an interference dissatisfied with the Board’s decision may appeal directly to this court. If a dissatisfied party wishes to supplement the record, however, 35 U.S.C. § 146 allows that party to initiate a civil action in a United States District Court to bring forth “further testimony.” “Section 146 actions have been described as a hybrid of an appeal and a trial de novo.” Estee Lauder v. L’Oreal, S.A., 129 F.3d 588, 592 (Fed. Cir. 1997). In Section 146 actions, if the parties present

new evidence to the district court that conflicts with the record before the Board, the district court must make de novo factual findings regarding this new evidence. See Mazzari v. Rogan, 323 F.3d 1000, 1005 (Fed. Cir. 2003).

The Board found that Schembri had not advanced any “meaningful evidence” to show that one of ordinary skill in the art would not have understood Besemer’s specification to inherently disclose using bubbles to mix fluid in a closed chamber, as required by Besemer’s claim 66. Board Decision, slip op. at 28. The Board specifically told Agilent what kind of additional evidence might have been useful:

Meaningful evidence in this case might, for example, have included an expert declaration stating that one of ordinary skill in the art would not have had the requisite knowledge or skills to conclude from the Besemer ’224 specification that the inventor was in possession of the invention as claimed.

Id.

Before the district court, Agilent attempted to remedy this evidentiary deficiency by submitting new expert testimony regarding the Besemer application’s disclosure. Specifically, Agilent submitted deposition testimony from Affymetrix’s own expert explaining that bubbles are not inherently present in the “vortexer” embodiment of Figure 29 (discussed below). Agilent further offered admissions from Affymetrix’s expert that Besemer’s “cavity 310” (under Agilent’s claim construction, the claimed “closed chamber”), in the embodiments of Figure 28 and 30, is not closed during hybridization. This evidence was highly probative of the parties’ dispute regarding the alleged deficiency in the Besemer specification. Moreover, these admissions, viewed in the light most favorable to Agilent, conflict with Affymetrix’s arguments that the Besemer application supports the claims at issue.

The district court, however, discarded this evidence, concluding that “Agilent does not present any new evidence concerning this issue, [so] the Court reviews [the Board’s decision on written description] for substantial evidence.” SJ Order, slip op. at 20.

The district court’s decision to deferentially review the Board’s written description holding in the face of newly submitted conflicting evidence constituted legal error. Section 146 affords a litigant the option of shoring up evidentiary gaps that may have been evident by the end of the inter partes interference procedure. In this case, the Board explicitly notified Agilent of such gaps, and Agilent endeavored to fill them. Thus, Section 146 permits such new evidence and authorizes the trial court to review the Board’s treatment of the written description issue. This court will examine Agilent’s newly proffered testimony without deference to the Board’s finding.

B.

Agilent’s argument for finding no written description support in the Besemer application for the claims at issue can be summarized as follows: the “circulator” embodiments (illustrated in Figures 28 and 30) do not describe a method that takes place in a “closed chamber,” whereas the “vortexer” embodiment (Figure 29) does not describe bubble mixing at all. Thus, as per Agilent, Besemer cannot show possession of the claimed invention because no embodiments describe a method of both introducing fluid into a closed chamber and using bubbles to mix the fluid.

As discussed above, the proper construction of “closed chamber . . . adapted to retain a quantity of fluid” is “an enclosed cavity defined by the inner surfaces of the first

and second substrates, from which there is no egress of fluid.” First, this court will look to the Besemer specification to identify a disclosure of such an enclosed cavity.

Throughout the Besemer specification, the enclosed space between a hybridization chip and its associated chip package is interchangeably called a “cavity” or a “reaction chamber.” See, e.g., Besemer Application at 3 (“A chip is then mated to a package having a reaction chamber with fluid inlets. When mated, the probe array is in fluid communication with the reaction chamber.”); id. at 9 (“Package 300 contains a cavity 310 on which a chip is mounted. The package includes inlets 350 and 360 which communicate with cavity 310. Fluids are circulated through the cavity via inlets 350 and 360.”). Figure 6 shows a cross-sectional view of the cavity, which is situated between the chip 120 and the chip casing 410:

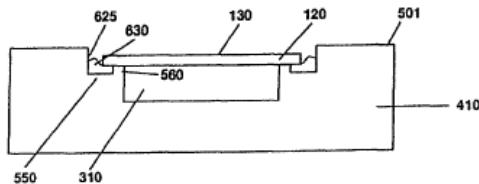


FIG. 6

The Besemer application explains that this reaction chamber or cavity can be “sealed” to prevent egress of fluid. Id. (“A septum, plug, or other seal may be employed to seal the fluids in the cavity.”). Thus, the relevant “chamber” in the Besemer application is the reaction chamber or cavity 310.

Notably, in the “circulator” agitation embodiments of Figures 28 and 30, the reaction chamber or cavity 310 is not sealed to prevent the escape of fluid. Quite to the contrary, these embodiments actually require circulation of fluid in and out of the cavity to facilitate mixing. As Agilent’s expert Dr. Arthur Schleifer explained in his report

submitted to the district court, “[d]uring the hybridization and mixing process using the apparatuses depicted in Figure 28 and Figure 30 of the Besemer specification, fluid moves in and out of the chamber for the mixing process.” Expert Report at 11. Indeed, Affymetrix’s expert, Dr. Dorian Liepmann, also testified to his view that the hybridization reaction cavity 310 is not closed in either the Figure 28 or Figure 30 embodiment. Liepmann Dep. 110:22-111:6, Jan. 9, 2008. The district court’s finding that these circulator embodiments disclose “introducing a fluid . . . into the closed chamber” was thus necessarily predicated upon an erroneous and expansive interpretation of a closed chamber that spans an entire system of containers, channels, and cavities. In light of the proper claim construction and the undisputed facts, the circulator embodiments simply provide no disclosure of the claimed method of introducing fluid into a closed chamber.

The record shows, and the parties appear to agree, that Figures 28-30 are the only bubble mixing embodiments disclosed in the Besemer application. Thus, having eliminated Figures 28 and 30 as the source of written description support for the claimed method, this court turns to the Figure 29 embodiment.

This “vortexer” embodiment teaches introducing fluid into a closed reaction chamber from which fluid does not egress. Specifically, nitrogen gas forces fluid into the reaction cavity, and “[w]hen the cavity is filled, valves 2935, 2936, and 2955 are closed to seal the fluid in the cavity.” Besemer Application at 29. Thus, the next question is whether this vortexer embodiment further describes “providing a bubble in the fluid” and “moving a bubble within the fluid to result in mixing,” as required by the claims in question.

Affymetrix relies on two mentions of bubbles in the Besemer application as providing support for bubble mixing in the vortexer embodiment. In the first such mention, the application teaches that bubbles are formed when fluid circulates in and out of the cavity 310:

Cavity 310 may include inlets 350 and 360. Selected fluids are introduced into and out of the cavity via the inlets. In some embodiments, the inlets are located at opposite ends of the cavity. This configuration improves fluid circulation and regulation of bubble formation in the cavity. The bubbles agitate the fluid, increasing the hybridization rate between the targets and complementary probe sequences.

Id. at 10 (emphases added). This reference to bubble formation and agitation cannot satisfy the written description requirement for the claim at issue, however, because this excerpt pertains to the “circulator” embodiments of Figures 28 and 30, not the vortexer embodiment of Figure 29. This discussion of bubble formation is explicitly directed at embodiments where fluid is “introduced into and out of the cavity via the inlets” to “improve[] fluid circulation.” However, as discussed above, the Besemer embodiments where fluid circulates in and out of the reaction chamber are incompatible with the claimed requirement that fluid is introduced into a “closed chamber . . . adapted to retain a quantity of fluid.” Indeed, a method of creating bubbles by flushing fluid in and out of a cavity is at odds with a method of using bubbles to mix fluid within a sealed cavity.

The only other mention of bubbles is also inextricably wedded to the circulator embodiments and therefore inconsistent with bubble mixing in a closed chamber:

Fig. 28 illustrates an agitation system in detail. . . . In operation, a fluid is placed into container 2810. The fluid, for example, may contain targets that are to be hybridized with probes on the chip. Container 2810 is sealed by closing port 2811 while container 2820 is vented by opening port 2821. Next, N<sub>2</sub> is injected into container 2810, forcing the fluid through tube 2850, cavity 310, and finally into container 2820. The bubbles formed by the N<sub>2</sub> agitate the fluid as it circulates through the

system. When the amount of fluid in container 2810 nears empty, the system reverses the flow of the fluid by closing valve 2840 and port 2821 and opening valve 2841 and port 2811. This cycle is repeated until the reaction between the probes and targets is completed.

Id. at 27-28 (emphases added). Here, bubbles are formed by repeatedly forcing fluid in and out of the cavity 310, using containers 2810 and 2820 as fluid repositories. The stated purpose of this embodiment is to cause repeated ingress and egress of fluid out of the cavity to facilitate the hybridization reaction between targets and probes. Thus, in no sense can this mention of bubbles constitute a disclosure of bubble mixing in a “closed chamber.”

Affymetrix, recognizing that the Besemer application makes no explicit mention of bubbles or bubble mixing in the context of the vortexer embodiment, argues that bubbles are inherently produced in the vibrating chip package because “[a] person skilled in the art would have known in 1994 that to achieve mixing, there must be a void in the chamber – that is, it is not completely filled with fluid. As a result, a bubble is provided in the fluid, and when the chip package is vibrated, the bubble is moved within the fluid to result in mixing.” Appellee’s Br. 17 (emphasis in original). This assertion, however, is belied by a critical admission from Affymetrix’s expert that bubbles are not necessarily formed by nitrogen gas in the vortexer reaction chamber:

Q. Now, does this system as depicted in Figure 29 and described in the Besemer application necessarily generate bubbles in the fluid that is flowing from container 2930 into container 310?

A. No, it does not necessarily have to do that.

Liepmann Dep. 22:22-111:6 (emphasis added).

The very essence of inherency is that one of ordinary skill in the art would recognize that a reference unavoidably teaches the property in question. See In re

Oelrich, 666 F.2d 578, 581 (CCPA 1981) (“Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”); Hitzeman v. Rutter, 243 F.3d 1345, 1355 (Fed. Cir. 2001) (“an inherent property must necessarily be present in the invention . . . and it must be so recognized by persons of ordinary skill in the art”). Especially in light of this admission, Affymetrix’s argument that the vortexer chamber might include an unmentioned void, and in turn, that that void might result in bubble generation, is insufficient under this court’s precedent to establish inherency.

In sum, the formation of bubbles in the Besemer disclosure is part and parcel of a process of moving fluid in and out of the hybridization reaction chamber. Besemer simply does not disclose a method of bubble mixing in a closed hybridization chamber, as required by the claims. Viewing the record in the light most favorable to Agilent, the district court erred by granting summary judgment in Affymetrix’s favor.

Moreover, in light of the new evidence submitted to the district court, which this court reviews without deference to the Board’s earlier finding, this court finds no dispute of material fact that the Besemer application does not teach the claimed method. This court is mindful that continuing applications, such as Affymetrix’s application here, can only receive the benefit of an earlier-filed parent application if that parent fully supports the claims. If not supported in the parent application, fundamental fairness requires that claims to new matter receive, at best, the filing date of the continuing application. In this case, the record shows by a preponderance of the evidence that Affymetrix copied Agilent’s claims into its continuation application despite not having disclosed the method in question. As this court stated in Amgen Inc. v. Hoechst Marion Roussel Inc., “[t]he

purpose of the written description requirement is to prevent an applicant from later asserting that he invented that which he did not; the applicant for a patent is therefore required to recount his invention in such detail that his future claims can be determined to be encompassed within his original creation.” 314 F.3d 1313, 1330 (Fed. Cir. 2003) (citation omitted). Affymetrix’s current claims are not encompassed by Besemer’s original creation. Thus, this court reverses the district court’s denial of Agilent’s cross motion for summary judgment.

#### CONCLUSION

As discussed above, the district court’s claim construction was erroneous. Further, the district court erroneously granted Affymetrix’s motion for summary judgment regarding written description. Because there is no dispute of material fact that the Besemer application does not satisfy the written description requirement for the claims at issue, this court reverses the judgment of the district court.

#### REVERSED

#### COSTS

Each party shall bear its own costs.