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## United States Court of Appeals for the Federal Circuit

02-1529  
(Serial no. 09/234,481)

IN RE DANIEL A. GATELY

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DECIDED: July 10, 2003

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Before RADER, Circuit Judge, FRIEDMAN, Senior Circuit Judge, and LINN, Circuit Judge.

FRIEDMAN, Senior Circuit Judge.

This appeal challenges the decision of the Board of Patent Appeals and Interferences (“Board”) of the United States Patent and Trademark Office (“Office”) that affirmed a patent examiner’s rejection of a patent application as anticipated by an earlier patent. We affirm.

I

The appellant Daniel A. Gately applied for a patent covering “a method for producing” a chemical known as EBI

“from an indene in good yield at moderate temperatures.” Only claims 1 -6 and 8 of the 39 claims in the application are involved in this appeal. Claim 1 is the only independent claim of those seven. Gately states that the 6 other claims “stand or fall with claim 1,” and we shall not discuss them separately.

Claim 1 covers “A solution of an alkali metal alkoxide having” a specified “formula” that includes “an alkali metal” and “a hydrocarbyl group having one to ten carbon atoms in a non-interfering solvent,” which “solution contains from about 10 mol percent to about 20 mol percent of said alkali metal alkoxide.” The Board stated that “[t]he invention relates to isomerization agents,” which “are said to be useful to convert kinetic EBI to thermodynamic EBI” and “to convert meso 3,3’ substituted EBI to a meso/rac mixture . . . EBI is applicant’s abbreviation for all isomers of bis(indenyl) ethane.” (internal quotation marks omitted).

After a patent prosecution that the Board characterized as “bare bones,” in a two page “Final Office Action” the examiner rejected claims 1-8 “as being clearly anticipated by” the Drahoslav patent. The examiner’s explanation for his ruling was: “The Examples [in Drahoslav] clearly disclose solutions of K and Na alkoxides containing 10 to 20 mole % alkoxides.” Drahoslav covers a “method of purifying alkali metal alkoxides.”

In a 25 page opinion, the Board affirmed. The Board made 80 findings of fact, which, it stated, “[t]he record supports . . . by at least a preponderance of the evidence.” In a series of calculations, assumptions and conclusions (Findings 35-78), the Board found that the chemical reactions specified in examples 1 and 5 of Drahoslav would produce solutions containing between 10 and 20 mole percent of the alkali metal alkoxide (either 13.1 percent or 10.4 percent in example 1 and either 13.1 percent or 11 percent in example 5, Findings 53, 55, 56, 75, 77, 78.) Illustrative of the kinds of calculation and analysis the Board made are the following findings:

51. What we feel comfortable in saying is that at least the sodium t-butoxide 52.8% yield (whether based on sodium or alcohol) must have been mixed with the tetrahydrofuran right after the almost clear solution was filtered and prior to crystallization.

52. If the yield is based on the initial amount of sodium, then the yield in mols of sodium t-butoxide would be:

$$1.3 \text{ moles sodium} \times 0.528 = 0.686 \text{ mols sodium t-butoxide}$$

53. From the 0.686 mols figure, we can determine that the concentration of sodium t-butoxide in the almost clear solution containing at least sodium t-butoxide and tetrahydrofuran after it has been filtered and prior to crystallization is about 13.1%

$$\frac{0.686}{0.686 + 4.56} = \frac{0.686}{5.246} = \text{about } 13.1\%$$

Since the percentage limitation was the only limitation in claim 1 of Gately’s application that was in dispute, the Board’s findings on this point led it to conclude: “The subject matter of Example 1 of Drahoslav prima facie anticipates

claims 1-3 and 5-6. The subject matter of example 5 of Drahoslav prima facie anticipates claims 1-8.” (Findings 79 and 80). In this appeal, that apparently is the only limitation Gately addresses and challenges.

The Board then held that because its “basis for finding anticipation is the first articulation on the record of a fact-based rationale in support of anticipation,” and therefore a “new” “rationale” for finding anticipation,

we designate our affirmance as a new ground of rejection under 37 CFR § 1.196(b). In this respect, if there is further prosecution, the examiner may, of course, supplement our rationale with whatever was in his mind when he made the anticipation rejection. Applicant too may supplement the record, and as authorized by Spada, 911 F.2d at 708, 15 USPQ2d at 1658, applicant may argue that the inference of lack of novelty was not properly drawn, for example, if we did not correctly apply or understand Drahoslav or drew unwarranted inferences from Drahoslav. . . . As a result of our designation of the affirmance as a new ground of rejection, applicant now has an option to present new evidence.

Gately did not present any new evidence. Instead, he petitioned for rehearing. He contended, among other things, that the Board was not authorized to issue a new ground of rejection, and that a number of the Board’s findings were based on speculation and were erroneous for lack of evidentiary support. In a memorandum opinion and order, the Board rejected those contentions and denied rehearing.

The Board also stated: “applicant states that anticipation must be based on an explicit or an inherent disclosure of an invention. We suggest that binding precedent provides yet another mechanism for determining whether a rejection based on prima facie anticipation is proper during ex parte prosecution of patent applications.” It further stated that under In re Best, 562 F.2d 1252, 1255 (CCPA 1977),

if the claimed and prior art products are identical or substantially identical, the USPTO can require an applicant to prove that the prior art product does not necessarily or inherently possess the characteristics of the claimed product. In order to invoke the principles of In re Best, the USPTO makes factual findings on a case-by-case basis which support a conclusion that the claimed and prior art products prima facie are “identical or substantially identical.” Simply put, Best is applied when the USPTO does not have sufficient evidence upon which to base facts to determine whether a difference exists between claimed subject matter and a prior art reference. . . . If the facts in a case allow the USPTO to make that inference, the USPTO may properly invoke the principles of In re Best and shift the burden to applicants to come forward with evidence establishing that the respective products differ.

## II

Section 102(b) of Title 35 of the United States Code bars the issuance of a patent if “the invention was patented . . . more than one year prior to the date of the application for patent in the United States.” “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631 (Fed. Cir. 1987) (citation omitted). “It is well settled that a prior art reference may anticipate when the claim limitations not expressly found in that reference are nonetheless inherent in it. Under the principles of inherency, if the prior art necessarily functions in accordance with, or includes, the claimed limitations, it anticipates.” In re Cruciferous Sprout Litig., 301 F.3d 1343, 1349 (Fed. Cir. 2002) (citations and internal

quotation marks omitted). “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.” In re Robertson, 169 F.3d 743, 745 (Fed Cir. 1999) (citations and internal quotation marks omitted).

This court has recognized a gloss on the foregoing principles. As the Board pointed out in denying rehearing, once a prima facie case of anticipation or obviousness has been established and the Office “cannot readily determine whether a difference exists between the subject matter of a given claim and a particular prior art document,” the Office “can require an applicant to prove that the prior art product does not necessarily or inherently possess the characteristics of the claimed product.” See also In re Spada, 911 F.2d 705, 708-09 (Fed. Cir. 1990); In re Best, 562 F.2d 1252, 1255 (C.C.P.A., 1977) (“Where, as here, the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.”). “[A] prima facie case of anticipation [may be] based on inherency.” In re King, 801 F.2d 1324, 1327 (Fed. Cir. 1986).

That was precisely the procedure the Board followed in this case. After a detailed review of the evidence and the series of calculations based on that evidence, the Board concluded that a prima facie case of anticipation had been shown. It treated this conclusion as a new rejection, thereby giving Gately the opportunity to submit new evidence to refute that conclusion or to show why the existing evidence did not support it. Gately did not submit new evidence, and the Board rejected his factual and other challenges to its findings.

Of course, to establish a prima facie case of anticipation the Office must show that the elements of that concept have been preliminarily established, i.e., the evidence, unless rebutted, must show that all the elements in the claims of the application are set forth, either explicitly or inherently, in the allegedly anticipating prior art reference.

The Drahoslav patent may be searched in vain for any requirement, or even suggestion, that the chemical reaction there described would produce a solution containing a specified mole percentage range of alkoxides. The Board’s finding of prima facie anticipation, therefore, must rest upon the conclusion that inherent in the reaction described in Drahoslav was the production of such a mole percentage rate, i.e., that such result necessarily resulted from the process.

Because the Office does not have any laboratory or other facilities for seeking experimentally to replicate the Drahoslav process to determine whether it produced that result, the Board necessarily had to resort to other methods of evaluation. It began with the process described in examples 1 and 5 of Drahoslav, made certain calculations reflecting the steps and processes there specified, and then drew various inferences and conclusions from those results. On the basis of those calculations, the Board concluded that if the procedures specified in example 1 and 5 were performed, the resulting solutions would contain between 10 and 20 mole percent of the alkali metal alkoxide – the precise limitation described in Gately’s patent application.

To be sure, the Board’s treatment of this issue necessarily involved some assumptions, judgments, and even conjectures. These seem inevitable, however, in the kind of analysis performed, and are not grounds for rejecting the Board’s conclusions. The Board’s function here was to determine only whether a prima facie case of anticipation had been shown, and we cannot say that the Board’s affirmative answer to that question lacked evidentiary basis in the record or was otherwise erroneous.

Gately contends, however, that because Drahoslav did not “explicitly” describe all the limitations in his claims, the Board was precluded from making a prima facie anticipation rejection, and that the only possible rejection would have been one for obviousness under 35 U.S.C. § 103; and he urges us to reverse the Board’s anticipation rejection and remand for the Office to consider an obviousness rejection. This argument, however, ignores the fact that a prima facie anticipation rejection may be based on inherency. The Board was fully justified in the procedural course it followed in this case.

Gately had full opportunity to present any evidence, including laboratory tests replicating the process specified in examples 1 and 5, that he believed would refute the prima facie case. He did not do so, however. Instead, in his petition for rehearing he challenged, on the existing record, the evidentiary basis for some of the Board’s findings and conclusions and also certain of the Board’s assumptions and theories. The Board did not err in rejecting these contentions and denying rehearing.

#### CONCLUSION

The orders of the Board (1) affirming the examiner’s rejection of claims 1-8 of Gately’s patent application, and (2)

denying rehearing, are

AFFIRMED.