

# United States Court of Appeals for the Federal Circuit

2007-1450  
(Reexamination No. 90/006,297)

IN RE BASELL POLIOLEFINE ITALIA S.P.A.

Warren K. MacRae, Loeb & Loeb LLP, of New York, New York, argued for appellant.

Thomas W. Krause, Associate Solicitor, Office of the Solicitor, United States Patent and Trademark Office, of Arlington, Virginia, argued for the Director of the United States Patent and Trademark Office. With him on the brief was Heather F. Auyang, Associate Solicitor. Of counsel were Sydney O. Johnson, Jr., Acting Solicitor, Shannon M. Hansen, and Janet A. Gongola, Associate Solicitors.

Appealed from: United States Patent and Trademark Office  
Board of Patent Appeals and Interferences

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Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

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DECIDED: November 13, 2008

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Before NEWMAN, LOURIE, and LINN, Circuit Judges.

Opinion for the court filed by LOURIE, Circuit Judge. Dissenting opinion filed by NEWMAN, Circuit Judge.

Basell Poliolefine Italia, S.P.A. (“Basell”) appeals from two decisions of the United States Patent and Trademark Office (“PTO”) Board of Patent Appeals and Interferences (“Board”) resulting from a Director-ordered reexamination of U.S. Patent 6,365,687 (“the ‘687 patent”). The Board affirmed the rejections of all the claims of the ‘687 patent as unpatentable under 35 U.S.C. §§ 102(b) and 103(a) and the doctrine of obviousness-type double patenting. Because the Board did not err in concluding that the pending claims were barred under the doctrine of obviousness-type double patenting, we affirm.

BACKGROUND

The '687 patent, entitled "Process for the Polymerization and Copolymerization of Certain Unsaturated Hydrocarbons," was issued on April 2, 2002. Giulio Natta ("Natta"), Piero Pino, and Giorgio Mazzanti are named inventors and Basell is the assignee. The '687 patent claims priority from Italian Application No. 25,109, filed July 27, 1954 ("the Italian application").<sup>1</sup> The invention relates to "a process for copolymerizing unsaturated hydrocarbons of the formula  $\text{CH}_2=\text{CHR}$  in which R is a saturated aliphatic radical with two or more carbon atoms or a cycloaliphatic radical, in the presence of a catalyst comprising a catalytic aluminum alkyl compound and a catalytic titanium halide compound." '687 patent Abstract. Claims 1 and 9, which are both representative claims, read as follows:

1. A process which comprises polymerizing ethylene with an alpha-olefin,  $\text{CH}_2=\text{CHR}$ , wherein R is a saturated aliphatic radical with 2 or more carbon atoms or a cycloaliphatic radical, in the presence of a catalyst obtained by reacting an aluminum alkyl compound with a catalytic titanium halide compound.

9. A process for preparing a copolymer comprising copolymerizing monomeric olefin molecules comprising a monomeric vinyl hydrocarbon having the formula  $\text{CH}_2=\text{CHR}$ , wherein R is a saturated aliphatic radical having at least 2 carbon atoms or is a cycloaliphatic radical, in the presence of a catalyst comprising a catalytic aluminum alkyl compound and a catalytic titanium halide compound.

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<sup>1</sup> The '687 patent issued from U.S. application Ser. No. 07/883,912 ("the '912 application"), which was filed on May 12, 1992 and is "a continuation, of U.S. application Ser. No. 07/719,666, filed Jun. 24, 1991, now abandoned, which is a continuation of 07/607,215, filed Oct. 29, 1990, now abandoned, which is a continuation of 06/906,600, filed Sep. 10, 1986, now abandoned, which is a continuation of 06/498,699, filed May 27, 1983, now abandoned, which is a continuation of 04/710,840, filed Jan. 24, 1958, now abandoned, which is a divisional of 04/514,097, filed Jun. 8, 1955, now abandoned." '687 patent col.1 ll.5-14.

'687 patent claims 1 & 9 (emphases added). Thus, the pending claims generally involve polymerizing any alpha-olefin C<sub>4</sub> or higher with any olefin (in some claims, specifically ethylene) using a titanium halide aluminum alkyl catalyst.

On June 7, 2002, the PTO initiated a Director-ordered reexamination. The reexamination was for all claims based on double patenting in view of two expired patents issued to Natta, viz., U.S. Patents 3,256,235 (“the '235 patent”) and 3,403,139 (“the '139 patent”). During the course of reexamination, the Examiner added double patenting rejections based on two other expired patents issued to Natta, viz., U.S. Patents 3,317,496 (“the '496 patent”) and 3,582,987 (“the '987 patent”).

On March 30, 2005, the Board affirmed the double patenting rejections. The Board first determined whether the patentees were entitled to a one-way or two-way test for double patenting. The Board found that the circumstances did not dictate the application of a two-way test for double patenting. The Board concluded that the patentees “significantly controlled the rate of prosecution throughout the chain of ancestor applications,” and thus the one-way test applied. In re Basell Poliolefine, No. 2004-1390, slip op. at 15 (B.P.A.I. Mar. 30, 2005) (“2005 Board Decision”). After reviewing the examiner’s double patenting rejections, the Board upheld the rejections on each ground.

Turning to the new grounds of rejection based on §§ 102 and 103, the Board determined that U.S. Patent 3,058,963 (“Vandenberg”) raised a substantial new question of patentability within the meaning of the reexamination statute in effect on June 7, 2002. The Board found that the patentees failed to establish that the '687 patent was entitled to the earlier filing date of the Italian application sufficient to

antedate the Vandenberg reference. Id. at 126. Because the patentees were not entitled to the benefit of priority under 35 U.S.C. § 119, the Board held that Vandenberg was available as prior art under 35 U.S.C. §§ 102(b) and 103. The Board found that claims 1-4, 8-13, 15, 21-26, 28, 31, 32, 35, 39-44, and 48-52 were anticipated by Vandenberg and claims 1-52 would have been obvious over Vandenberg under § 103(a).<sup>2</sup>

In a second appeal, on March 29, 2007, the Board affirmed the §§ 102(b) and 103(a) rejections based on Vandenberg and finalized all of the obviousness-type double patenting rejections. The Board held that, even though the PTO previously cited Vandenberg, that reference raised a substantial new question of patentability under the previous 35 U.S.C. § 303(a) based on the particular facts of this case. In particular, the Board found that “the examiner never fully considered the substantive issues of patentability of the claims over [Vandenberg] as a result of the incorrect assessment of the effective filing date.” In re Basell Poliolefine, No. 2007-0111, slip op. at 47 (B.P.A.I. Mar. 29, 2007). As such, the citation of Vandenberg in the original examination did not bar rejections based on Vandenberg during reexamination. The Board further held that the appealed claims were not entitled to the benefit of an earlier filing date under 35 U.S.C. §§ 119 and 120 and reaffirmed its finding that the claims were either anticipated or rendered obvious in view of Vandenberg.

Basell timely appealed the Board’s decision. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A).

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<sup>2</sup> Claims 1-34 appear in the '687 patent, and claims 35-52 were added during reexamination.

## DISCUSSION

Because we conclude that the Board's decision can be affirmed based on its obviousness-type double patenting rejection in view of the '987 patent, we focus our inquiry on that issue. Double patenting is a question of law that we review de novo. In re Emert, 124 F.3d 1458, 1460 (Fed. Cir. 1997). The determination of whether a one-way or two-way analysis applies is also a question of law that we review without deference. Id. We review the Board's factual findings for lack of substantial evidence. Id.

On appeal, Basell argues that the Board erred in rejecting the claims for obviousness-type double patenting in view of the '987 patent. First, Basell argues that the '987 patent was considered during original prosecution of the '687 patent and thus cannot be considered during reexamination under the previous version of 35 U.S.C. § 303(a) and our holdings in In re Portola Packaging, Inc., 110 F.3d 786 (Fed. Cir. 1997) and In re Recreative Technologies Corp., 83 F.3d 1394 (Fed. Cir. 1996). Second, Basell asserts that the Board erred in dismissing declaration evidence. Next, Basell argues that the Board erred because it failed to conduct an analysis under Graham v. John Deere Co., 383 U.S. 1 (1966), as of the earliest filing date claimed in the '687 patent. Lastly, Basell contends that the Board erred by failing to apply a two-way obviousness-type double patenting analysis. According to Basell, any delay in the prosecution of the patent was attributable to the PTO.

In response, the Director argues that the Board properly considered the '987 patent. According to the Director, the '987 patent was never considered during the original prosecution of the '687 patent, but only in another application that involved

claims that were unrelated to the rejected claims. The Director also asserts that the Board properly considered the declaration evidence but found it insufficient to support Basell's claims. The Director further argues that, contrary to Basell's assertion, an obviousness-type double patenting analysis does not always require a full Graham obviousness analysis to be performed as of the priority date of the pending claims. Lastly, the Director contends that the Board properly applied a one-way obviousness-type double patenting analysis because Basell effectively controlled the rate of prosecution.

We agree with the Director that the claims of the '687 patent are unpatentable based on obviousness-type double patenting in view of the '987 patent. "The doctrine of double patenting is intended to prevent a patentee from obtaining a time-wise extension of [a] patent for the same invention or an obvious modification thereof." In re Lonardo, 119 F.3d 960, 965 (Fed. Cir. 1997). The judicially created doctrine of obviousness-type double patenting "prohibit[s] a party from obtaining an extension of the right to exclude through claims in a later patent that are not patentably distinct from claims in a commonly owned earlier patent." Eli Lilly & Co. v. Barr Labs., Inc., 251 F.3d 955, 967 (Fed. Cir. 2001). In determining double patenting, a one-way test is normally applied, in which "the examiner asks whether the application claims are obvious over the patent claims." In re Berg, 140 F.3d 1428, 1432 (Fed. Cir. 1998). In unusual circumstances, where an applicant has been unable to issue its first-filed application, a two-way test may apply, in which "the examiner also asks whether the patent claims are obvious over the application claims." Id.

As a preliminary matter, we are unpersuaded by Basell's assertion that the Board erred by failing to apply a two-way test for double patenting. The two-way test is "a narrow exception to the general rule of the one-way test." Id. The test arose out of the concern "to prevent rejections for obviousness-type double patenting when the applicants filed first for a basic invention and later for an improvement, but, through no fault of the applicants, the PTO decided the applications in reverse order of filing, rejecting the basic application although it would have been allowed if the applications had been decided in the order of their filing." Id. Thus, the two-way test may be appropriate "in the unusual circumstance that the PTO is solely responsible for the delay in causing [a] second-filed application to issue prior to [a] first." Id. at 1437.

Those circumstances, however, are not present here. The record shows that the patentees did not present any claim resembling the claims at issue until 1964, nine years after Natta filed the first U.S. application in the chain of priority and well after Natta filed the application that resulted in the '987 patent. Moreover, those claims appear to have been filed for interference purposes only. In addition, the Board found that since 1954, the patentees repeatedly submitted claims directed to claims covering other inventions, urged the examiner to declare interferences for unrelated inventions, and repeatedly filed continuing applications without appeal. During the critical co-dependent period of the applications for the '687 patent and the '987 patent, Natta could have filed the present claims. Natta's actions, or inactions, had a direct effect on the prosecution and thus were responsible for any delay in prosecution. We find no error with regard to the Board's findings and agree with the Board that the two-way test for double patenting does not apply.

We are likewise unpersuaded by Basell's assertion that the '987 patent cannot be relied upon by the Board because it was previously considered during the original prosecution. The record demonstrates that the '987 patent was cited during the prosecution of a different patent application, viz., application no. 06/498,699, which was ultimately abandoned. Notably, the claims of that application differ from the claims of the '687 patent in that the recited catalyst contained a titanium chloride limitation, whereas the '687 patent encompasses catalysts that generally encompass the generic titanium halides. In attempting to overcome the double patenting rejection during the prosecution of the '699 application, Natta et al. argued that it would not have been obvious to use the titanium chloride catalyst recited in the claims of the '699 application. Thus, the rejection based on the '987 patent during the prosecution of the '699 application involved different claims than the claims at issue. As such, we agree with the Director that the Board was not precluded under Portola or Recreative Technologies from relying on the '987 patent in its double patenting rejection.<sup>3</sup>

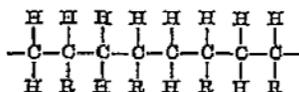
The critical inquiry before us is whether the claims of the '687 patent define an obvious variation of the claims of the '987 patent. In concluding that it does, the Board relied on claim 1 of the '987 patent which recites:

1. A process for polymerizing monomeric materials selected from the group consisting of (a) unsaturated hydrocarbons of the formula  $\text{CH}_2=\text{CHR}$  in which R is selected from the group consisting of saturated aliphatic radicals containing 1 to 4 carbon atoms and the phenyl radical to

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<sup>3</sup> We note that Portola was overruled by 35 U.S.C. 303(a) by legislation for "any determination of the Director of the United States Patent and Trademark Office that is made under section 303(a) . . . on or after [November 2, 2002]." See, e.g. In re Swanson 540 F.3d 1368, 1379-80 (Fed. Cir. 2008). The double patenting rejection during the reexamination was made on June 13, 2004, thereby making it subject to the new statute and not Portola.

solid linear polymerizates comprising a mixture of substantially linear, regular head-to-tail amorphous, atactic homopolymers, substantially linear, regular head-to-tail partially crystalline homopolymers, and homopolymers consisting of isotactic macromolecules as defined and which show a regular succession of —CH<sub>2</sub>— and —CHR— groups in long linear chains which assume, at least for long macromolecule sections, a regular structure



wherein R has the same significance as above and the asymmetric carbon atoms of the main chains have identical steric configurations on the same chain at least for long sections, and which macromolecules are crystallizable; (b) mixtures of said unsaturated hydrocarbons to solid linear copolymerizates; and (c) mixtures of said unsaturated hydrocarbons containing to to [sic] 10% of another olefinic monomer copolymerizable therewith to a solid linear copolymerizate, which process comprises contacting the monomeric material with a catalyst prepared by bringing a halide of a transition metal belonging to Groups IV to VI inclusive of the Mendeleeff Periodic Table in which the metal has a valency higher than 3 into intimate contact with an alkyl compound of an element belonging to Groups II to III inclusive of said table mixed with the monomeric material to be polymerized.

'987 patent claim 1 (emphases added). As indicated earlier, independent claims 1 and 9 of the '687 patent, which are typical claims in the patent, recite:

1. A process which comprises polymerizing ethylene with an alpha-olefin, CH<sub>2</sub>=CHR, wherein R is a saturated aliphatic radical with 2 or more carbon atoms or a cycloaliphatic radical, in the presence of a catalyst obtained by reacting an aluminum alkyl compound with a catalytic titanium halide compound.

9. A process for preparing a copolymer comprising copolymerizing monomeric olefin molecules comprising a monomeric vinyl hydrocarbon having the formula CH<sub>2</sub>=CHR, wherein R is a saturated aliphatic radical having at least 2 carbon atoms or is a cycloaliphatic radical, in the presence of a catalyst comprising a catalytic aluminum alkyl compound and a catalytic titanium halide compound.

'687 patent claims 1 & 9 (emphases added).<sup>4</sup>

We agree with the Board's conclusion that the claims of the '687 patent are not patentably distinct from claim 1 of the '987 patent. Claim 1 of the '687 patent covers polymerizing 1) an alpha-olefin of C<sub>4</sub> or higher, 2) with ethylene, 3) using a titanium halide aluminum alkyl catalyst. As the Director and the Board correctly noted, the claim encompassing those limitations is an obvious variant of claim 1 of the '987 patent. Specifically, with regard to the alpha olefin of C<sub>4</sub> or higher, claim 1 of the '987 patent provides that one of the monomeric materials may include "unsaturated hydrocarbons of the formula CH<sub>2</sub>=CHR in which R is selected from the group consisting of saturated aliphatic radicals containing 1 to 4 carbon atoms." Thus, both claims of the '987 patent and the '687 patent cover alpha olefins of C<sub>4</sub> to C<sub>6</sub>. In addition, with regard to ethylene, claim 1 of the '987 patent recites "another olefinic monomer," and thus covers a genus that includes ethylene. Similarly, with regard to the titanium halide aluminum alkyl catalyst, claim 1 of the '987 patent covers a genus that the parties do not dispute includes titanium halide, as well as a genus that includes aluminum alkyl. Claim 1 of the '687 patent is thus not patentably distinct from claim 1 of the '987 patent.

Similarly, claim 9 of the '687 patent, which does not limit one of the starting monomeric materials to ethylene but instead covers a broader class of olefin molecules, is not patentably distinct from claim 1 of the '987 patent because that claim likewise covers a broad class of olefinic monomers.

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<sup>4</sup> Basell states that claims 1-8, 16-21, 29-52 stand or fall together, as do claims 9-15 and 22-28. We therefore focus our analysis on representative claims 1 and 9 of the '687 patent.

In essence, the claims of the '987 and '687 patents consist of various permutations of polymerization of olefins with various numbers of carbon atoms using catalysts of titanium halides and aluminum alkyls. Some expressions are generic to others. While it is true that a generic expression does not render obvious all of the species that it encompasses, these claims are both generic and specific to each other in interchangeable ways, involving the same groups of species.

The '987 claims are directed to polymerization of C<sub>3</sub> to C<sub>6</sub> olefins with other mixtures of unsaturated hydrocarbons. As homologs are presumptively obvious over known compounds, these claims render obvious the claims of the '687 patent directed to polymers of the homologous, well-known ethylene and C<sub>4</sub> olefins (claim 1) and the copolymerization of C<sub>4</sub> olefins (claim 9). It is worthy of note that, while claim 1 of the '687 patent recites ethylene, its specification is almost entirely directed to propylene, which is encompassed by '987 claim 1; the discussion of ethylene is limited and it is mentioned briefly in a statement that a small amount of ethylene does not interfere with the polymerization of propylene. Thus, propylene is squarely within the scope of the '987 patent's C<sub>3</sub> to C<sub>6</sub> scope. Claim 9 is directed to polymerization of C<sub>4</sub> and higher olefins, just as is the '987 patent.

Moreover, the specification of the '987 patent itself refers to ethylene, propylene, butene, and other olefins which indicates that those olefins were intended to fall within the meaning of the claims. Thus, the PTO had good basis for its conclusion that the claims of the '987 patent rendered obvious the claims of the '687 patent and that the latter claims are invalid for obviousness-type double patenting.

Relying on In re Kaplan, 789 F.2d 1574 (Fed. Cir. 1986), Basell asserts that the rejection must be reversed because the Board improperly read limitations from the '987 specification into the claims in concluding that the claims are not patentably distinct. We disagree. While we stated in Kaplan that it is impermissible to treat a "patent disclosure as though it were prior art" in a double patenting inquiry, we further reaffirmed the holding in In re Vogel, 422 F.2d 438 (CCPA 1970), that certain instances may exist where a patent's disclosure may be used. Kaplan, 789 F.2d at 1580. Indeed, our predecessor court stated that a patent's disclosure may be used to determine whether an application claim is merely an obvious variation of an invention claimed in a patent. Vogel, 422 F.2d at 441-42. The court stated that the disclosure may be used to learn the meaning of terms and in "interpreting the coverage of [a] claim." Id. at 441. It may also be used to answer the question whether claims merely define an obvious variation of what is earlier disclosed and claimed. The court stated that the disclosure "sets forth at least one tangible embodiment within the claim, and it is less difficult and more meaningful to judge whether [something] has been modified in an obvious manner." Id. at 442. The court further stated that "use of the disclosure is not in contravention of the cases forbidding its use as prior art, nor is it applying the patent as a reference under 35 U.S.C. § 103, since only the disclosure of the invention claimed in the patent may be examined." Id. As such, we conclude that the Board did not err in referring to the specification of the '987 patent when it determined whether the claims were patentably distinct from the claims of the '687 patent.

We further disagree with Basell's argument that the Board failed to consider the declaration evidence of its experts, Drs. Floyd and Porri. Indeed, in its 2005 decision,

the Board expressly considered those declarations and found them to be unpersuasive. 2005 Board Decision at 100-03. We find no error with regard to the Board's consideration of those declarations.

We are also unpersuaded by Basell's assertion that the double patenting rejection should be reversed because the Board failed to expressly conduct a full Graham analysis in determining that the '687 patent claims were an obvious variant of claim 1 of the '987 patent. Indeed, "this court has endorsed an obviousness determination similar to, but not necessarily the same as, that undertaken under 35 U.S.C. § 103 in determining the propriety of a rejection for double patenting." In re Braat, 937 F.2d 589, 592-93 (Fed. Cir. 1991). Hence, we find no basis for reversing the Board's decision merely because the Board failed to expressly set forth each of the Graham factors in its analysis. The Board carefully considered claim 1 of the '987 patent and the claims of the '687 patent and determined that a person of ordinary skill in the art would have found the '687 patent claims to have been obvious. We find no error in the Board's analysis.

We have considered Basell's remaining arguments and find none that justify a reversal. Having concluded that the Board properly affirmed the rejection of claims 1-52 of the '687 patent based on obviousness-type double patenting in view of the '987 patent, we need not address the remaining issues raised by Basell regarding the §§ 102(b) and 103(a) rejections, as well as the additional double patenting rejections. Accordingly, the Board's decision is affirmed.

AFFIRMED

# United States Court of Appeals for the Federal Circuit

2007-1450  
(Reexamination No. 90/006, 297)

IN RE BASELL POLIOLEFINE ITALIA S.P.A.

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

NEWMAN, Circuit Judge, dissenting.

The patent on appeal is directed to the production of crystalline copolymers of alpha-olefins having four or more carbon atoms, using a catalyst obtained by reacting an aluminum alkyl with a titanium halide; the inventor is Natta et al. (the “Natta ‘687 patent”). The initial application was filed in 1958, flowing from discoveries that started with the polymerization of ethylene and that have produced new materials that continue to revolutionize the packaging and several other industries. The scientific achievements reflected in these discoveries won a Nobel Prize in 1963 for Dr. Giulio Natta and Dr. Karl Ziegler.

I write in dissent, first because the reexamination here conducted was in violation of the reexamination law as it then existed. Such violation should not be condoned, for the PTO is as bound by the law as are those who practice before it. If this improper reexamination were to be tolerated, as do my colleagues on this panel, it at least

warrants strict scrutiny. Yet the panel majority defers to unsupported findings, permits the PTO to ignore all of the expert evidence, and joins in the PTO's unfair allocation to the inventors of blame for the extreme delays here illustrated.

***The Reexamination Statute before November 2, 2002***

Reexamination before 35 U.S.C. §303 was amended effective November 2, 2002, was available only on certain grounds not considered during the initial examination. The purpose was to protect patentees from the harassment of too-facile reexamination, lest the abuses outweigh the benefits.<sup>1</sup> Reexamination of the Natta '687 patent was not requested by any interested person, but was ordered by the Director of the PTO for the stated reason: "The failure of the Office to consider the entire patent family for potential double patenting issues has created an extraordinary situation for which a Commissioner ordered reexamination is an appropriate remedy." Director Initiated Order for Reexamination, at 2 (Jun. 7, 2002). However, the issue of double patenting had been considered during the initial examination; and the examiner had found, as stated in the Reasons for Allowance, that: "The statutory double-patenting rejection has been obviated by the amendments set forth in the latest response . . . The obviousness-type double patenting rejection is withdrawn as per MPEP § 804(I)(B)." Reason for Allowance, Application/Control No. 07/883,912, at 3 (Sept. 27, 2001).

The PTO apparently recognized that there was a problem with its initiation of this reexamination, for the Board stated that if this court were to find that the reexamination

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<sup>1</sup> In In re Swanson, 540 F.3d 1368, 1381 (Fed. Cir. 2008), this court commented on the amended section 303, stating that "we are mindful that Congress intended that the courts continue to 'judiciously interpret the substantial new question standard to prevent cases of abusive tactics and harassment of patentees through reexamination.'" (citing H.R. Rep. No. 107-120, at 3 (2002)).

had been improperly initiated, on remand the PTO would simply institute another reexamination under the amended statute. Ex parte Basell, Appeal No. 2004-1390, Reexamination Control No. 90/006,297, at 122 n.37 (Aug. 19, 2004).

The PTO's brief on appeal does not attempt to justify the reexamination on double patenting grounds, but instead argues only an alternative ground related to entitlement to the initial filing date and the effect of an intervening reference. This ground was also considered during the initial examination of the Natta '687 patent, with the examiner's Reasons for Allowance stating: "The prior art rejections are withdrawn because the right to benefit of the filing date of the Italian ['109] priority application has been established, and thus the Vandenberg and Anderson patents are antedated." In sum, no valid basis has been provided for this reexamination.

My colleagues now review only the double patenting rejection, ignore the underlying impropriety, and chastise the patentee for delays for which it was not responsible.

### ***The issue of delay***

The PTO criticizes the long period from initial filing to issuance of the Natta '687 patent. It is indeed extraordinarily long. However, the reexamination examiner acknowledged that there were "PTO delays due to multiple interferences which occurred from the 1950's up to 1984 or 1985," while also stating that the applicant "caused a substantial number of delays from 1985 to 2000." Examiner's Answer, Application Number: 90/006,297, at 30 (Jan. 13, 2004). The latter period included an appeal to this court, during which the PTO moved for remand in order to conduct additional examination. The record shows no violation by the applicant of the PTO's

rules and procedures, or any significant departure from standard practices, in Natta's participating in time-consuming procedures.

The delays due to patent interferences are notorious, and here there were three, involving multiple parties and multiple countries. Interference delays generally flow from not only the complexity of the subject matter and requisite proofs, but also the due process that PTO procedures assure in these complex inter partes proceedings, including the rights of appeal and the authorized judicial proceedings. It may well be that the PTO has been unfairly criticized for the lengthy pendency illustrated by this patent; however, it is equally unfair to chastise this patentee, when most of the delay was agreed by the PTO to be due to its procedures.

Whatever the reasons for the prolonged pendency, delay is not a ground of double patenting.

### ***The double patenting issue***

The PTO had consistently found that the claims of the Natta '687 patent are patentably distinct from the claims of the '987 patent. In both the examination and the reexamination, the examiners found that the classes of copolymers and catalysts in the '687 claims were patentably distinct from those claimed in the '987 patent. The PTO agreed that the subject matter claimed in the Natta '687 patent is not an obvious variant of the '987 claims.

In the prosecution history of the Natta '687 patent, Dr. Natta had explained the issues involving the higher olefins of the '687 invention:

[T]he presence of any substantial amount of the higher olefins inhibits polymerization of the ethylene while the higher olefins, if they react at all, do so only at the very low

reaction rates and, in any case, without yielding polymers of the type with which this invention is concerned.

Prosecution history of Natta U.S. Application No. 03/710,840, at 5. Expert polymer scientists testified that it would not have been predicted whether or how the higher olefins would behave in this system, or which catalysts would be effective. Professor Lido Porri testified that “Claim 1 of the ‘987 patent . . . is too broad and incomplete to have motivated one of skill in the art in 1954 to attempt to prepare such a catalyst and to have had a reasonable expectation that a copolymer as recited could be prepared.” Declaration of Professor Lido Porri ¶44 (Oct. 30, 2002). Expert polymer scientist Dr. Joseph C. Floyd declared: “In mid-1954, the reference to the new two component catalyst system of claim 1 [of the ‘987 patent] would have been too broad to have motivated one of ordinary skill to attempt to prepare such a catalyst system and have had a reasonable expectation that a copolymer as recited could have been prepared.” Declaration of Joseph C. Floyd ¶40 (Nov. 4, 2002).

The expert witnesses explained that before the invention claimed in the ‘687 patent, attempts to copolymerize ethylene with a higher olefin had been unsuccessful. Both Professor Porri and Dr. Floyd so stated. Second Declaration of Professor Lido Porri ¶20 (May 24, 2005); Third Declaration of Dr. Joseph C. Floyd ¶41 (May 27, 2005). Indeed, the PTO does not dispute that the claimed subject matter of the ‘687 and the ‘978 patents is patentably distinct. The presence of overlapping subject matter, and the specific choice of catalyst, present technological questions that were answered by the experts, without contradiction. The record contains no contrary authority, no citations or references or arguments, other than the flawed presumption of “homology” created by my colleagues.

All of the experts testified as to the inability at that time to copolymerize ethylene and butylene, and that it was not possible to predict whether any adaptation of these new catalyst systems would achieve this long-sought result. The reexamination examiner wrote that “The present coinventors developed a ground-breaking invention, so one skilled in the art would have been astounded by their accomplishments at the time the invention was made.” Examiner’s Answer, Application Number: 90/006,297, at 38.

The law of double patenting is in terms of whether the later claimed invention is an obvious variant of the earlier claimed invention. In General Foods Corp. v. Studiengesellschaft Kohle mbH, 972 F.2d 1272 (Fed. Cir. 1992), the court stressed the critical role of patentable distinction in obviousness-type double patenting:

[T]he determining factor in deciding whether or not there is double patenting is the existence vel non of patentable difference between two sets of claims. The phrases actually used in the opinion include “patentably distinguishable,” “patentable distinctions,” and “whether such differences would have been obvious to one of ordinary skill in the art.” They are all equivalent.

Id. at 1278-79. Although the Board ruled that it was irrelevant whether the ‘987 patent provided guidance for polymerization of alpha-olefins higher than propylene, such lack of guidance or absence of enablement is indeed relevant to whether the later invention would have been obvious in light of the earlier, or whether the asserted obvious variant could have been patented in both patents. As the ‘687 patent states, and as the witnesses reinforced, longer chain hydrocarbons behave differently, and their catalysis is unpredictable. See ‘687 patent col. 1, ll. 62-65 (“it was not apparent that those [reaction] agents would be useful in the polymerization of the unsaturated hydrocarbons containing the vinyl group.”); id. at col. 2, ll. 54-58 (“In view of the foregoing, it could not

be predicted, from the work with ethylene, that our polymerization agents would be useful for the production of higher molecular weight polymers of the vinyl hydrocarbons of formula  $\text{CH}_2=\text{CHR}$  as defined herein.”) In addition, the claims must be considered in their entirety, including the specific catalysts, whose use in these specific systems is agreed not to be shown in the earlier patent.

In sum, in view of the recognition that the process in the '687 claims is patentably distinct from the '987 claims, double patenting can not lie. See Application of Sarett, 327 F.2d 1005, 1016 (C.C.P.A. 1964) (reversing rejections for obviousness-type double patenting because generic and specific claims may nonetheless be patently distinct); see generally In re Jones, 958 F.2d 347, 350 (Fed. Cir. 1992) (explaining that a disclosure of a chemical genus does not automatically render obvious any species within the genus).

In view of the irregularity of the reexamination and the flawed rulings on this appeal, I must, respectfully, dissent.