

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 17

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FABIENNE LEPELTIER,
SYLVIE ROBERT,
JEAN-PAUL BOITIAUX,
BLAISE DIDILLON,
and
OLIVIER CLAUSE

Appeal No. 1999-0058
Application No. 08/701,878

ON BRIEF

Before KIMLIN, PAK, and DELMENDO, Administrative Patent Judges.
DELMENDO, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1 through 4, 7 through 14, and 16 through 23, which are all of the claims pending in the subject application.¹

The subject matter on appeal relates to a catalyst (claims

¹ In response to the final Office action of June 6, 1997 (paper 7), the appellants submitted an amendment under 37 CFR § 1.116 (1981). This amendment, however, was denied entry.

16 and 17) and a process for its preparation (claims 1 through 4, 7 through 14, and 18 through 23). According to the present specification, the catalyst is particularly useful for dehydrogenation of a particular hydrocarbon feedstock. (Page 3, lines 6-9.) Further details of this appealed subject matter are recited in illustrative claims 1, 21, and 22 reproduced below:

1. A process for the preparation of a catalyst comprising at least one metal from group VIII of the periodic table, at least one alkali metal or alkaline-earth metal, at least one halogen or halogenated compound, at least one metal M which is germanium, tin, lead, iron, titanium or chromium, a support and optionally sulfur, said process comprising impregnating the group VIII metal into the support by means of an aqueous solution of a halogenated compound thereof, and impregnating metal M into the support subsequent to calcination and activation of a precatalyst containing the support and group VIII metal, in an inert or reducing atmosphere, thereby producing said catalyst.

21. A process for the preparation of a catalyst comprising at least one metal from group VIII of the periodic table, at least one alkali metal or alkaline-earth metal, at least one halogen or halogenated compound, at least one metal M which is germanium, tin, lead, iron, titanium or chromium, and optionally sulfur, said process comprising impregnating the group VIII metal by means of an aqueous solution of a halogenated compound thereof, and impregnating metal M subsequent to calcination and activation of a precatalyst containing the support and group VIII metal, in an inert or reducing atmosphere, thereby producing said catalyst, wherein the metal from group VIII is platinum, palladium or ruthenium.

22. A process for the preparation of a catalyst comprising at least one metal from group VIII of the periodic table, at least one alkali metal or alkaline-earth metal, at least one halogen or halogenated compound, at least one metal M which is germanium, tin, lead, iron, titanium or chromium, and optionally

(Advisory action of October 8, 1997, paper 9; decision on petition of February 5, 1998, paper 13.)

sulfur, said process comprising impregnating the group VIII metal by means of an aqueous solution of a halogenated compound thereof, and impregnating metal M subsequent to calcination and activation of a precatalyst containing the support and group VIII metal, in an inert or reducing atmosphere, thereby producing said catalyst, wherein the metal from group VIII is platinum.

The examiner relies on the following prior art reference as evidence of unpatentability:

Bournonville et al. (Bournonville)	4,628,130	Dec. 09, 1986
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Claims 1 through 4, 7 through 14, and 16 through 23 on appeal stand rejected under 35 U.S.C. § 112, second paragraph, as indefinite. (Examiner's answer, page 3.) Further, claims 1 through 4, 7 through 14, and 16 through 23 on appeal stand rejected under 35 U.S.C. § 103(a) as unpatentable over Bournonville. (Id. at pages 4 through 6.) Additionally, claims 1 through 4, 7 through 14, and 16 through 23 stand finally and provisionally rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1 through 3, 5 through 12, and 23 through 44 of commonly owned, copending application 08/239,062. (Final Office action, page 8; appeal brief, pages 3 and 7; examiner's answer, pages 2 and 7.)

At page 3 of the appeal brief, the appellants request separate consideration for appealed claims 21 and 22 based on "[s]eparate arguments in support of the patentability of these claims." We therefore limit our discussion as to the propriety of the examiner's 35 U.S.C. § 103 rejection to claims 1, 21, and

22.² See 37 CFR § 1.192(c)(7) (1997). Concerning the obviousness-type double patenting rejection, however, the appellants have not advanced any substantive argument, much less separate arguments directed to the subject matter of appealed claims 21 and 22. Accordingly, all of the appealed claims stand or fall together with respect to the obviousness-type double patenting issue.

We reverse the examiner's 35 U.S.C. § 112, second paragraph, rejection, but affirm the 35 U.S.C. § 103(a) and obviousness-type double patenting rejections. Our reasons follow.

Rejection under 35 U.S.C. § 112, Second Paragraph

The examiner's position is stated as follows:

Claims 1 and 21-23 lack essential steps in the process of making the catalyst. The catalyst prepared by the process of claims 1 and 21-23 comprise an optional sulfur component and at least one alkali or alkaline earth metal. Claims 1 and 21-23 do not set forth any steps referring to the addition of said alkali or alkaline earth metal component as well as the optional sulfur component into the catalyst. Therefore, it is unclear as to how the processes as claimed can result in a catalyst optionally containing sulfur and at least one alkali or alkaline earth metal. [Examiner's answer, p. 3.]

We are in substantial agreement with the appellants' analysis on this issue. (Appeal brief, pages 3-4; reply brief, pages 1-2.) The test for definiteness under the second paragraph of 35 U.S.C. § 112 is whether one skilled in the relevant art

² Claims 2 through 4, 7 through 14, 16 through 20, and 23 on appeal stand or fall together with claim 1.

would understand the bounds of the claim when read in light of the specification. Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). That is, a claim complies with the second paragraph of section 112 if, when read in light of the specification, it reasonably apprises those skilled in the relevant art of the scope of the invention. Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1385, 231 USPQ 81, 94 (Fed. Cir. 1986).

In this case, the specification does not particularly limit the manner by which the alkali or alkaline earth metal component or the optional sulfur component is to be incorporated into the catalyst, although an example of the introduction of alkali or alkaline earth metal is provided at page 9, lines 4-8. Hence, one skilled in the art would readily understand that appealed claims 1 and 21 through 23 encompass any process that comprises the recited steps, where the resulting catalyst contains alkali or alkaline earth metal. Under these circumstances, the examiner has not adequately established on this record why one skilled in the relevant art would not be able to ascertain the bounds of the appealed claims when read in light of the specification.

Rejection under 35 U.S.C. § 103

Bournonville describes a process for preparing a catalyst comprising the steps of: (a) impregnating a carrier, i.e. a support, with an aqueous or organic solution of at least one nickel compound, the volume of the solution being preferably equal or greater than the retention volume of the support; (b)

filtering and optionally washing the impregnated support with distilled water; (c) drying and roasting the impregnated support in air at a temperature from about 110°C to about 600°C;³ (d) reducing the impregnated carrier with hydrogen at a temperature from about 200°C to about 600°C;⁴ and then (e) impregnating the resulting product with an aqueous or organic solution of a germanium, tin, and/or lead compound. (Column 3, lines 5-18.) As pointed out by the examiner (examiner's answer, page 4), Bournonville teaches that an alkali metal such as Na may be present in the support. (Column 2, lines 36-45.) Further, the examiner correctly found (examiner's answer, page 7) that Bournonville describes the impregnation of an aqueous solution of a halogenated Group VIII compound into the support. In this regard, nickel chloride is the first of only a few species of nickel compounds listed at Bournonville's column 3, lines 39-43. Additionally, Bournonville teaches the incorporation of other conventional dehydrogenating Group VIII metals, which include platinum. (Column 4, lines 13-21.)

On the basis of these factual findings, we are convinced that it would have been prima facie obvious for one of ordinary

³ The calcination of the impregnated support containing the group VIII metal as recited in the appealed claims may be conducted "in an oxidizing atmosphere between 300°C and 650°C." (Specification, p. 9, ll. 22-24.)

⁴ The reduction of the calcined, impregnated support as recited in the appealed claims is preferably conducted in hydrogen at a temperature between 300°C and 600°C. (Specification, p. 9, l. 24 to p. 10, l. 8.)

skill in the art to arrive at a process encompassed by appealed claim 1, 21, or 22 in order to produce a useful catalyst as described in Bournonville, motivated by a reasonable expectation of success. In re O'Farrell, 853 F.2d 894, 904, 7 USPQ2d 1673, 1681 (Fed. Cir. 1988).

Because there is substantial evidence to support the examiner's determination of a prima facie case of obviousness, the burden of proof was properly shifted to the appellants to rebut the prima facie case by convincing argument or evidence (e.g., unexpected results). In re Mayne, 104 F.3d 1339, 1343, 41 USPQ2d 1451, 1455 (Fed. Cir. 1997) ("With a factual foundation for its prima facie case of obviousness shown, the burden shifts to applicants to demonstrate that their claimed fusion proteins possess an unexpected property over the prior art."). The question as to whether unexpected advantages have been demonstrated is a factual question. Id. (citing In re Johnson, 747 F.2d 1456, 1460, 223 USPQ 1260, 1263 (Fed. Cir. 1984)). Thus, it is incumbent upon the appellants to supply the factual basis to rebut the prima facie case of obviousness established by the examiner. See, e.g., In re Klosak, 455 F.2d 1077, 1080, 173 USPQ 14, 16 (CCPA 1972).

The appellants argue that Bournonville is "generic to the incorporation of [G]roup VIII metal through the use of both aqueous and organic solution of the metal." (Appeal brief, page 5.) This argument has no merit. Bournonville undeniably teaches the impregnation of the support with an aqueous solution of

nickel chloride, as we have discussed above. While the appellants would have us believe that Bournonville's disclosure is limited to its working examples, one of ordinary skill in the art would have considered the reference in its entirety, including the description of the preferred embodiments. Merck & Co. Inc. v. Biocraft Labs. Inc., 874 F.2d 804, 807, 10 USPQ2d 1843, 1846 (Fed. Cir. 1989); In re Fracalossi, 681 F.2d 792, 794 n.1, 215 USPQ 569, 570 n.1 (CCPA 1982); In re Lamberti, 545 F.2d 747, 750, 192 USPQ 278, 280 (CCPA 1976).

Relying on Examples 1-4 as described in the specification (pages 12-19), the appellants allege that "introduction of chlorine through a hexachloroplatinic acid solution provides an unexpected advantage over catalysts where platinum is introduced by an organic solution containing no chlorine..." (Appeal brief, page 6.) We do not find the relied upon evidence to be persuasive.

In Example 1 of the appellants' specification, the control catalyst (catalyst A) is said to be prepared by impregnating a solution of platinum bisacetylacetonate in toluene onto calcined, pretreated alumina.⁵ By contrast, Bournonville describes the use of an aqueous solution of nickel chloride (column 3, lines 6-7, 41) and, in the working examples, an ammonia solution of nickel acetate. Both the aqueous solution of nickel chloride and the

⁵ The data relating to control catalyst D (Example 3) has little, if any, probative value because the catalyst is prepared

ammonia solution of nickel acetate are closer to the appellants' claimed invention than the organic solution of platinum bisacetylacetonate in toluene. The appellants, therefore, have not compared the claimed invention against the closest prior art. In re Baxter Travenol Labs, 952 F.2d 388, 392, 21 USPQ 1281, 1285 (Fed. Cir. 1991) ("[R]esults must be shown to be unexpected compared with the closest prior art.").

Also, the showing is not commensurate in scope with the degree of patent protection desired. Concerning this point, appealed claims 1, 21, and 22 read on a process that uses a multitude of M metals and mixtures of M metals, any support, and any alkali or alkaline earth metal, in any relative atomic or molar ratio under almost any condition. The showing is even further removed from being commensurate in scope with appealed claim 1, which encompasses the use of any Group VIII metal. By contrast, inventive catalysts B and C of Example 1 are made by using specific catalyst components in specific atomic or molar ratios under specific preparation conditions. Under these circumstances, it cannot be said that the limited showing of the examples of the specification sufficiently supports the broad scope of the appealed claims. In re Kulling, 897 F.2d 1147, 1149, 14 USPQ2d 1056, 1058 (Fed. Cir. 1990) ("'[O]bjective evidence of nonobviousness must be commensurate in scope with the claims.'"; (quoting In re Lindner, 457 F.2d 506, 508, 173 USPQ

by impregnating a solution of hexachloroplatinic acid and stannic chloride.

356, 358 (CCPA 1972)); In re Dill, 604 F.2d 1356, 1361, 202 USPQ 805, 808 (CCPA 1979) ("The evidence presented to rebut a prima facie case of obviousness must be commensurate in scope with the claims to which it pertains.").

Moreover, the appellants do not point to any objective evidence to establish that the differences in terms of selectivity between catalysts A, B, and C would have been considered unexpected by one of ordinary skill in the art. It is not enough to show that there is a difference in results for the claimed invention and the closest prior art; the difference in results must be shown to be unexpected. In re D'Ancicco, 439 F.2d 1244, 1248, 169 USPQ 303, 306 (CCPA 1971) (holding that the appellants failed to rebut a prima facie case of obviousness where the asserted differences between the claimed foams and prior art foams were not shown to be significant); In re Freeman, 474 F.2d 1318, 1324, 177 USPQ 139, 143 (CCPA 1973) (explaining that in order for a showing of unexpected results to be probative evidence of nonobviousness, an applicant must establish (1) that there actually is a difference between the results obtained through the claimed invention and those of the prior art and (2) that the difference actually obtained would not have been expected by one skilled in the art at the time of invention).

Because the appellants have not rebutted the examiner's prima facie case of obviousness with persuasive argument or evidence, we uphold the examiner's 35 U.S.C. § 103 rejection of

appealed claims 1 through 4, 7 through 14, and 16 through 23 as unpatentable over Bournonville.

Provisional Obviousness-Type Double Patent Rejection

The appellants submit that the examiner's provisional obviousness-type double patenting rejection is premature because allowable subject matter has not been indicated in either the present application or the conflicting application, i.e.

application 08/239,062. On this point, the examiner states:

"Since appellants make no arguments with respect to the provisional double patenting rejection, the examiner's position in the final rejection stands." (Examiner's answer, page 7.)

The appellants' position has no merit. That allowable subject matter has not been indicated in either the present application or the conflicting application is of no moment.⁶ This is exactly the reason why the appealed claims were provisionally rejected. Under these circumstances, we summarily affirm the examiner's provisional obviousness-type double patenting rejection.

⁶ See MPEP § 804 (Jul. 1998).

Summary

In summary, we affirm the examiner's rejection under 35 U.S.C. § 103(a) of appealed claims 1 through 4, 7 through 14, and 16 through 23 as unpatentable over Bournonville. We also affirm the examiner's provisional rejection under the judicially created doctrine of obviousness-type double patenting of appealed claims 1 through 4, 7 through 14, and 16 through 23 as unpatentable over claims 1 through 3, 5 through 12, and 23 through 44 of commonly owned, copending application 08/239,062. However, we reverse the rejection under 35 U.S.C. § 112, second paragraph, of appealed claims 1 through 4, 7 through 14, and 16 through 23 as indefinite.

The decision of the examiner is affirmed.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

EDWARD C. KIMLIN)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
CHUNG K. PAK)	
Administrative Patent Judge)	APPEALS AND
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