

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VOLKSWAGEN GROUP OF AMERICA, INC.,
Petitioner,

v.

EMERACHEM HOLDINGS, LLC,
Patent Owner.

Case IPR2014-01554
Patent 6,037,307

Before FRED E. McKELVEY, JAMES T. MOORE, and
SHERIDAN K. SNEDDEN, *Administrative Patent Judges*.

McKELVEY, *Administrative Patent Judge*.

DECISION
Final Written Decision
35 U.S.C. § 318(a)

I. Introduction

A Decision to Institute an *inter partes* review trial was entered on 16 March 2015. Paper 13.

Patent Owner's Opposition on the merits was due on or 19 June 2015. Revised Scheduling Order, Paper 16, page 8.

In due course, the Board received an email from counsel for Patent Owner dated 16 June 2015 (1:41 p.m.) (Paper 18), the relevant portion of which reads:

I am lead counsel for Patent Owner in the above identified IPR proceedings [one of which is IPR2014-01554]. The Patent Owner Responses in each proceeding are due this Friday, June 19. This email is to advise the Board of the following issues concerning the 2014-01554 and 2014-01557 proceedings. I am generally available this week if the Board has any questions or wishes to discuss the matter further:

1. IPR2014-01554: Patent Owner will not be filing a Patent Owner Response.

The Board subsequently received an email from counsel for Petitioner, the relevant portion of which reads:

I am back-up counsel for Petitioner Volkswagen in IPR2014-01554. Petitioner Volkswagen seeks the Board's permission to file a Petitioner's Request for Judgment in this IPR proceeding, pursuant to 37 CFR 42.73(b).

Patent Owner EmeraChem indicated in an email to the Board on June 16, 2015 (see Paper 18) that "Patent Owner will not be filing a Patent Owner Response". No Patent Owner's Response was filed, although Patent

Owner's responses were filed in . . . four other simultaneously pending IPR proceedings between the parties. While the Practice Guide indicates that "[w]here the patent owner elects not to file a response, the patent owner will arrange for a conference call with the Board to discuss whether or not the patent owner will file a request for adverse judgment" (77 Fed. Reg. at 48766 (Aug. 14, 2012)), no such conference call was arranged, and on June 18, 2015 . . . [the Board] indicated in an email that the Board determined that "a conference call is not needed at this time."

Therefore, Petitioner Volkswagen requests permission to file a short Petitioner's Request for Judgment, in which the grounds for entry of judgment will be more fully explained. Petitioner proposes filing this paper by this Friday, September 18, 2015, which would have been the due date for Petitioner's Reply if a Patent Owner's Response had been filed in this proceeding.

Thank you for your assistance in this matter.

In response, the Board forwarded an email dated 16 September 2015 (5:02 p.m.), the relevant portion of which reads:

"[A] motion for judgment is not authorized. The matter is before the panel on the basis of the petition and nothing more is needed to decide the case. A decision can be expected at the same time decisions are entered in the four companion cases."

The Petition is now pending before the Board for entry of a final written decision. 35 U.S.C. § 318(a).

Notwithstanding the PTO email of 16 September 2015, at this time we now elect to enter a final written decision.

II. Background

A. The parties

Petitioner is Volkswagen Group of America, Inc. Paper 1, page 1.

Patent Owner is EmeraChem Holdings, LLC. Paper 6, page 2.

B. Involved Patent

The involved patent is U.S. Patent 6,037,307 (“the ’307 patent”) issued 14 March 2000, based on an application filed 10 July 1998. Ex. 1001.

C. Litigation

The ’307 patent is involved in litigation, viz., *EmeraChem Holdings, LLC v. Volkswagen Group of America, Inc., Volkswagen AG, and Volkswagen Group of America Chattanooga Operations, LLC*, No. 14-cv-132-PLR-HBG (E.D. Tenn. filed Mar. 31, 2014). Paper 1, page 1; Paper 6, page 2 and Paper 10, page 1.

An amended complaint was served on defendant Volkswagen Group of America Chattanooga Operations, LLC, on 6 November 2014. Paper 10, page 1.

An amended complaint was served on defendant Volkswagen Group of America, Inc., on 6 November 2014. *Id.*

An amended complaint was served on defendant Volkswagen AG on 8 January 2015. *Id.*

D. Evidence Relied Upon

The following evidence, listed by exhibit number, is relied upon in support of the Petition:

Name	Exhibit No.	Description	Date
Joy et al. “Joy”	1004	U.S. Patent No. 4,760,044	26 July 1988
Tauster et al. “Tauster”	1005	U.S. Patent No. 4,939,113	3 July 1990
Rieck et al. “Rieck”	1006	<i>Development of Non-Nickel Additives for Reducing Hydrogen Sulfide Emissions from Three-Way Catalysts,</i> SAE TECHNICAL PAPER SERIES 892095, ISBN 0148-7191	©1989

E. Grounds

Claims 1–15 appear in the ’307 patent.

The following grounds of unpatentability are urged in the Petition.

	Statutory Basis	Prior Art Relied On	Claims
Ground 1	§ 102(b)	Joy	1–8 and 11
Ground 2	§ 102(b)	Tauster	1–8 and 11
Ground 3	§ 102(b)	Rieck	1–7 and 11

Claims 9, 10, and 12–15 are not challenged.

II. Analysis

A. Claimed Invention

Claim 1 of the ’307 patent reads [indentation and matter within brackets added]:

A regenerable catalyst/sorber for removing gaseous sulfur compounds from gaseous streams comprising

- [1] a noble metal catalyst component,
- [2] a metal oxide sorber component selected from Ti, Zr, Hf, Ce, Al, Si or mixtures thereof and
- [3] up to 0.3 g/in³ of a modifier component consisting of an oxide of Ag, Cu, Bi, Sb, Sn, As, In, Pb, Au or mixtures thereof.

According to the written description portion of the '307 patent, a catalyst for Example 10 was prepared with the following elements:

- (1) Ceramic honeycomb carrier;
- (2) Sorber component of 2.2 g/in³;
- (3) Platinum (Pt) loading from 0.25 to 1.1 wt % of the sorber component; and
- (4) Metal modifier prepared with the metal nitrate precursor (0.00 to 0.30 g/in³).

Ex. 1001, col. 7:14–22.

Example 10

Example 10 . . . [is said to illustrate] the effect of Pt loading on the SO₂ breakthrough during 60 ppm SO₂ sorption cycles with a TiO₂/Pt/Cu catalyst/sorber (2.18 g/in³ TiO₂/Pt: 0.3 g/in³ Cu(NO₃)₂) at 500° F. FIG. 10 [reproduced below] . . . [is said to show] that the efficiency of the TiO₂/Pt/Cu is directly related to the Pt loading, such that the higher the loading the higher the sulfur capture capacity.

Ex. 1001, col. 8:44–50.

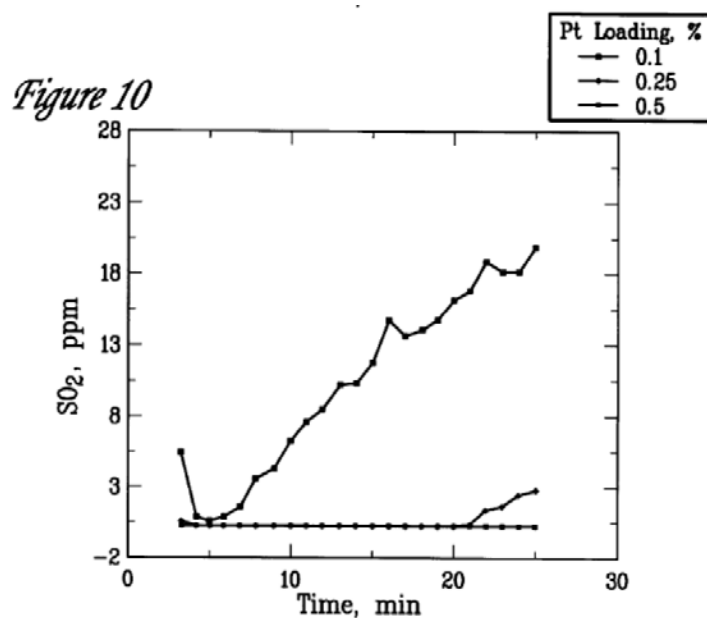


Fig. 10 depicts a graph describing the effect of Platinum (Pt) loading reported as wt % of sorber/carrier on the sulfur dioxide (SO₂) breakthrough during 60 ppm SO₂ run cycles at 500 °F

B. The Preliminary Response

While maintaining for various procedural reasons that an *inter partes* review trial should not be instituted, the Preliminary Response did not address the merits of whether the relied upon prior art references anticipate the challenged claims of the '307 patent.

Hence, we have before us an essentially unopposed petition.

C. Anticipation

To establish anticipation, a party must show by a preponderance of the evidence that a prior art reference expressly or inherently describes each claim limitation arranged as in the claim said to be anticipated. *Finisar*

Corp. v. DirecTV Group, Inc., 523 F.3d 1323, 1334–35 (Fed. Cir. 2008); *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008).

Whether a reference anticipates a claim is a question of fact. *In re Baxter Travenol Lab.*, 952 F.2d 388, 390 (Fed. Cir. 1991).

D.

Petitioner offered the direct declaration testimony of Dr. Robert J. Farrauto. Ex. 1007A. 37 C.F.R. § 42.63(a). Patent Owner has not offered any cross-examination testimony of Dr. Farrauto.

On the record before us, we find that Dr. Farrauto is qualified to testify on the subject matter involved and to offer scientific opinions concerning that subject matter. Ex. 1007A ¶ 1–6.

His testimony is consistent with the disclosures of the three references upon which his scientific opinions are based.

E. Ground 1—Joy

Petitioner has shown by a preponderance of the evidence that the invention defined by Joy claim 15 (Ex. 1004, col. 16:53–55), when interpreted in light of the written description portion of the Joy patent, anticipates claim 1 of the '307 patent.

Joy claim 15 depends from Joy claim 11 which depends from Joy claim 3 which depends from Joy independent claim 1.

Joy claim 1 calls for a “catalytic composite” which the written description portion of the specification describes as being useful for treatment of an exhaust gas comprising *inter alia* sulfur oxides. Ex. 1004, col. 3:38–42; col. 9:24–58.

Joy claim 15 calls for copper to be “present in a concentration of about 0.7 to about 15 g per liter of carrier volume” (Ex. 1004, col. 16:53–55), which Dr. Robert J. Farrauto testified “converts to 0.011 to about 0.246 grams per in³” (Ex. 1007A ¶ 23).

Accordingly, Petitioner has established that Joy claim 15 describes limitation [3] of claim 1 of the ’307 patent.

Joy claim 1 calls for one main catalytic material which can be platinum—a noble metal catalytic material. Ex. 1004, col. 16:1.

Accordingly, Petitioner has established that Joy claim 1 describes element [1] of claim 1 of the ’307 patent.

Joy claim 1 also calls for a secondary support comprising zirconia (zirconium oxide) or titania (titanium dioxide). Ex. 1004, col. 15:61–62.

Accordingly, Petitioner has established that Joy claim 1 describes element [2] of claim 1 of the ’307 patent.

Based on the same disclosure of Joy, Petitioner has established that each of claims 2–8 and 11 of the ’307 is anticipated by Joy.

F. Ground 2—Tauster

Tauster claim 1 calls for a catalyst system including:

three way catalyst means . . . comprising a first section of [a] refractory monolithic substrate, a particulate gamma alumina support dispersed on said first section of refractory monolithic substrate and catalyst metals chosen from the group consisting of palladium, the combination of platinum plus rhodium, and mixtures of platinum, palladium and rhodium, said catalyst metals being dispersed on said particulate gamma alumina support; and means for suppressing release of hydrogen

sulfide comprising a second section of monolithic refractory substrate having CuO dispersed thereupon in an amount of at least about 0.005 g/in³ of monolith

Ex. 1005, col. 15:60–col. 16:15.

Tauster’s 0.005 % g/in³ is within Patent Owner’s claimed range of up to 0.3 g/in³.

Accordingly, Petitioner has established that Tauster claim 1 describes limitation [3] of claim 1 of the ’307 patent as reproduced above.

Tauster claim 1 also calls for catalyst means including (1) palladium, (2) mixtures of platinum and rhodium and (3) mixtures of platinum, palladium, and rhodium—all noble metals. Ex. 1005, col. 15:66–68.

Accordingly, Petitioner has established that Tauster claim 1 describes limitation [1] of claim 1 of the ’307 patent.

Tauster describes making TWC Catalyst Preparation II (TWC means “three–way catalyst”). Ex. 1005, col. 5:40–col. 6:7.

According to Tauster, “[u]nstabilized alumina is impregnated with monoethanolamine platinum hexahydroxide and ceria” Ex. 1005, col. 5:41–42, 46, and 48.

Dr. Farrauto testified that a person having ordinary skill in the art would understand, based on the process described by Tauster, that platinum and ceria (cerium oxide) would be deposited on the monolith. Ex. 1007A, ¶¶ 26 (last three lines) and 27.

Example IV (Ex. 1005, col. 9:45–51) describes an additional step of adding CuO.

Table IX (*id.* at col. 14) describes data pertaining to the preparation of two sets of CuO-promoted TWC-II (*id.* at 10:32–33).

Table XI (*id.* at col. 15) describes data purporting to demonstrate that catalysts with CuO reduced transition of H₂S (hydrogen sulfide) more than 90% (*id.* at 10:41–47).

Accordingly, Petitioner has established that Tauster describes limitation [2] of claim 1 of the '307 patent as reproduced above.

Based on the same disclosure of Tauster, Petitioner has established that each of claims 2–8 and 11 of the '307 is anticipated by Tauster.

G. Ground 3—Rieck

An extended discussion concerning the applicability of Rieck¹ is not necessary.

The discussion beginning with the second sentence on page 37 of the Petition through page 39, as well as the testimony of Dr. Farrauto (Ex. 1007A, ¶¶ 29–33), demonstrates that Petitioner has established by a preponderance of the evidence claims 1–7 and 11 of the '307 patent are anticipated by Rieck.

We add the following. The catalyst is described as containing CeO₂ (cerium oxide) as shown in footnote (b) of Table 1 (page 4). It also is described as having platinum and CuFe₂O₄, thus meeting each of the limitations [1], [2], and [3] of claim 1 of the '307 patent as reproduced above.

Based on the disclosure of Rieck discussed in the Petition, and by

¹ Rieck has two sets of page numbers, one at the top and one at the bottom. We, like Petitioner, refer to the page numbers at the bottom.

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Dr. Farrauto, Petitioner has established by a preponderance of the evidence that each of claims 2–8 and 11 of the '307 is anticipated by Rieck.

III. ORDER

ORDERED that claims 1–8 and 11 of the '307 patent are determined to be *unpatentable*;

FURTHER ORDERED that because this is a final written decision, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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