

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

MEXICHEM AMANCO HOLDINGS S.A. de C.V.,
Petitioner,

v.

HONEYWELL INTERNATIONAL, INC.,
Patent Owner.

Case IPR2013-00576
Patent 8,444,874 B2

Before LINDA M. GAUDETTE, FRANCISCO C. PRATS, and
JACQUELINE WRIGHT BONILLA, *Administrative Patent Judges*.

BONILLA, *Administrative Patent Judge*.

DECISION
Denying Patent Owner's Request for Rehearing
37 C.F.R. § 42.71(d)

I. INTRODUCTION

Honeywell International, Inc. (“Patent Owner”) filed a Request for Rehearing (Paper 54, “Req. Reh’g” or “Request”) of our Final Decision (Paper 50, “Final Dec.”).

In our Final Decision, we concluded that Petitioner demonstrated by a preponderance of the evidence that claims 1 and 3–15, but not claim 2, of U.S. Patent No. 8,444,874 B2 (Ex. 1001, “the ’874 patent”) were unpatentable. Final Dec. 32. Patent Owner requests a rehearing as to our holding that Petitioner demonstrated by a preponderance of the evidence that claims 1 and 3–15 of the ’874 patent would have been obvious over Inagaki,¹ Konzo,² and Bivens,³ under 35 U.S.C. § 103. Req. Reh’g 1.

For the reasons discussed below, we deny Patent Owner’s Request for Rehearing.

II. ANALYSIS

In a request for rehearing, a dissatisfied party “must specifically identify all matters the party believes the Board misapprehended or overlooked, and the place where each matter was previously addressed in a motion, an opposition, or a reply.” 37 C.F.R. § 42.71(d).

In its Request, Patent Owner contends that we: (1) “misapprehended the prior art and erred by relying on non-prior art statements in the ’874 patent and by

¹ Inagaki et al., JP-04-110388, published April 10, 1992 (“Inagaki”) (Ex. 1002) (English translation Ex. 1003, Ex. 1068).

² Konzo et al., “Winter Air Conditioning,” (The Industrial Press 1958), pp. 590–596 (“Konzo”) (Ex. 1004).

³ Bivens et al., U.S. Pat. No. 6,783,691 B1, issued Aug. 31, 2004 (“Bivens”) (Ex. 1005).

relying on numerous other references that are not prior art”; (2) misapprehended or overlooked “Dr. Bivens’ testimony and other evidence” regarding what an ordinary artisan would have understood regarding refrigerants, as well as testimony from “both Dr. Bivens and Dr. Thomas, regarding the reactivity of HFOs [hydrofluoroolefins] and POE [polyol ester] lubricants”; and (3) “failed to consider and properly apply the *Graham* factors” when addressing “whether or not the particular prior art of record disclosed the term HFC to include unsaturated HFOs.” Req. Reh’g 1.

Regarding its first and third contentions, Patent Owner points out that the Board found “disclosures in the ’874 patent itself” to be “persuasive on this issue” of what an ordinary artisan would have understood the term “HFC” to mean at the time the relevant application was filed. *Id.* at 4 (citing Final Dec. 8). Patent Owner contends that, in doing so, we “overlooked the fundamental point of law that the test for obviousness is not how the inventors understood the term ‘HFC’, but instead how a POSITA [person of ordinary skill in the art] would have understood” the term. *Id.* Patent Owner further contends that we overlooked and misapprehended Patent Owner’s explanation that the ’874 patent included editing errors, as well as the “nature” of evidence cited by Petitioner, where “twenty of the twenty-one references can not be cited as prior art against the issued ’874 patent.” *Id.* at 4–5.

In our Final Decision, we construed the term “trans-1,3,3,3-tetrafluoropropene” recited in the challenged claims in view of the ’874 patent specification, and considered whether an ordinary artisan, at the time of filing, would have considered “trans-1,3,3,3-tetrafluoropropene” to be an “HFC,” i.e., a hydrofluorocarbon. Final Dec. 7–9. We acknowledged that, contrary to Petitioner’s position, Patent Owner asserted that the terms “HFC-1234ze” and

“trans-HFC-1234ze” describe unsaturated fluorocarbons, such as trans-1,3,3,3-tetrafluoropropene. *Id.* at 7 (citing PO Resp. 13). Looking at all evidence of record before us, however, we were not persuaded that the descriptions in the ’874 patent of HFCs as “hydrofluorocarbons,” and use of the term “HFC” as encompassing HFO compounds, corresponded to “sloppy editing” by patent applicants. *Id.* at 7–8 (quoting Patent Owner Response, Paper 21, 43). Rather, we were persuaded by evidence cited by Petitioner indicating that it was common to refer to HFOs as HFCs, as indicated in the ’874 patent itself, as well as in testimony by Dr. Stuart Corr (Ex. 1008 ¶¶ 17–18) and Petitioner’s witness, Dr. Bivens (Ex. 1070/1071, 109:22–110:16). We were persuaded, as suggested by the acronym itself, that “HFC,” referred to hydrofluorocarbons generally, i.e., compounds that included hydrogen, fluorine and carbon. Final Dec. 7–9. We were persuaded that “HFC” encompassed hydrofluoroolefins, such as a tetrafluoropropene, which included hydrogen, fluorine and carbon.

In this regard, Patent Owner asserts in its Request that we “overlooked and/or misapprehended the direct testimony of Dr. Bivens (see Ex 2040, ¶¶ 14, 20, and 42, cited in Paper 21 at 4–5, 13 and 45),” including where he stated in a declaration that “HFC-based refrigerants as used in the Bivens patents were not intended to encompass and would not have been understood by a POSITA to encompass unsaturated haloolefins.” Req. Reh’g 6. We did not overlook such testimony. Rather, we weighed all evidence of record, including deposition testimony of Dr. Bivens, and were persuaded that a preponderance of the evidence indicated that HFCs, i.e., HFC-based refrigerants generally, did not encompass saturated compounds only, but also included unsaturated HFC-based refrigerants, such as HFOs.

We note, in relation to Dr. Bivens' deposition testimony (Ex. 1070/1071, 109:22–110:16, cited in Final Dec. 9), that Patent Owner contends in its Request that this testimony related to “the '874 patent—not to the state of the prior art,” and that “Standard 34” referenced by Dr. Bivens “is not in the record” and “is not prior art to the '874 patent.” Req. Reh'g 9–10. Nonetheless, we remain persuaded that Dr. Bivens' deposition testimony is consistent with a finding, based on a preponderance of the evidence overall, that an ordinary artisan reading the Bivens reference would have understood “HFC-based refrigeration systems” in the Background section of that reference to refer to both saturated and unsaturated hydrofluorocarbons, such as HFOs, including the HFO described in Inagaki. See Ex. 1005, 1:46–50 (stating that “PAGs [polyalkylene glycols] and POEs are suitable lubricants for HFC-based refrigeration systems”).

As discussed in our Final Decision, while the Bivens reference may have described specific saturated HFCs in relation to its invention described therein, we are not persuaded that an ordinary artisan reading the Background section of Bivens, referring to “HFC-based refrigeration systems” generally, would have interpreted “HFC” as narrowly as Patent Owner argued during trial and argues again in its Request. Final Dec. 9–12, 14, 16–18.

Regarding its second contention, Patent Owner also contends in its Request that we “misapprehended or overlooked testimony from both Dr. Bivens and Dr. Thomas with respect to the reactivity of the refrigerant and lubricant.” Req. Reh'g 7–8. Patent Owner points us to testimony by Dr. Bivens stating that it was understood generally that HFOs were too unstable, reactive, and toxic, and therefore, “considered to be of no value as refrigerants.” *Id.* Patent Owner also quotes testimony by Dr. Thomas stating that “those skilled in the art would be dissuaded from using POEs with the fluorinated propenes of Inagaki for the same

reason that the art had universally avoided the use of POEs with CFCs [chlorofluorocarbons].” *Id.* at 8 (quoting Ex. 2042 ¶ 13). Patent Owner also refers to a reference (chapter on “Lubricants in Refrigeration Systems” from the 1998 ASHRAE Handbook on Refrigeration, Ex. 1034) cited by Petitioner, also addressing the chemical stability of lubricants. *Id.* at 8–9.

We did not overlook such testimony and evidence, or Patent Owner’s arguments along those lines. Final Dec. 13–18. Rather, we found that the Bivens reference taught that POE lubricant was among “suitable lubricants for HFC-based refrigeration systems,” even if it also taught that such lubricants have problems because “they are extremely hygroscopic.” *Id.* at 16 (citing Ex. 1005, 1:47–59). We also found, for the reasons discussed above, that when Bivens referred to “[h]ydrofluorocarbons (HFCs)” and “HFC” in the context of “HFC-based refrigeration systems,” it referred to hydrofluorocarbons generally, as established by a preponderance of the evidence before us. Thus, we concluded that evidence of record established sufficiently that an ordinary artisan would have understood at the time of filing of the ’874 patent that the term “HFC,” as used in Bivens, encompassed HFOs, such as those disclosed in Inagaki. *Id.* In pointing us to evidence that we previously considered when rendering our Final Decision, Patent Owner does not persuade us otherwise now.

For the reasons discussed above, we are not persuaded that we misapprehended or overlooked evidence referenced in Patent Owner’s Request for Rehearing. Nor are we persuaded that consideration of such evidence dictates that we alter our Final Decision as to the obviousness of claims 1 and 3–15 of the ’874 patent over Inagaki, Konzo, and Bivens.

III. CONCLUSION

We deny Patent Owner's Request for Rehearing.

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