

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SOLVAY, S.A.,)
)
 Plaintiff,)
)
 v.) Civ. No. 06-557-SLR
)
)
 HONEYWELL INTERNATIONAL INC.,)
)
 Defendant.)

Richard L. Horwitz & David Ellis Moore of Potter Anderson & Corroon, LLP, Wilmington, Delaware. Attorneys for Plaintiff. Of Counsel: Barry J. Herman, Jean-Paul Lavalleye, Richard D. Kelly, Jeffrey B. McIntyre, Tia D. Fenton & John F. Presper of Oblon, Spivak, McClelland, Maier & Neustadt, PC.

Thomas C. Grimm & Benjamin J. Schladweiler of Morris, Nichols, Arsht & Tunnell, LLP, Wilmington, Delaware. Attorneys for Defendant. Of Counsel: Laura M. Burson, Guy Ruttenberg, Gregg F. LoCascio & J. John Lee of Kirkland & Ellis, LLP.

MEMORANDUM OPINION

Dated: August 20, 2012
Wilmington, Delaware


ROBINSON, District Judge

I. INTRODUCTION

Plaintiff Solvay, S.A. ("Solvay") brought suit against defendant Honeywell Honeywell International Inc. ("Honeywell") asserting, inter alia, infringement of U.S. Patent No. 6,730,817 ("the '817 patent").¹ (D.I. 1) The parties cross-moved for summary judgment on the issues of infringement and validity of the '817 patent. (D.I. 121; D.I. 134) On December 9, 2008, the court granted Honeywell's motion for summary judgment of invalidity of the '817 patent, finding that Honeywell was the first inventor pursuant to 35 U.S.C. § 102(g). (D.I. 230) The court also granted Solvay's motion for summary judgment of infringement of claims 1, 5-7 and 10-11, and granted in part Honeywell's motion for summary judgment of no infringement, concluding that claims 12-18, 21 and 22 of the '817 patent were not infringed. (D.I. 229) On appeal, the Federal Circuit upheld the court's determination on infringement but reversed in part the court's opinion on invalidity, holding that Honeywell was not a prior inventor of the '817 patent for purposes of § 102(g). See *Solvay S.A. v. Honeywell Int'l, Inc.*, 622 F.3d 1367, 1370 (Fed. Cir. 2010). Following appeal, Honeywell filed various additional summary judgment motions, among which only its motion for summary judgment of no willful infringement was granted. (D.I. 274)

A jury trial was held from September 21-28, 2011 to determine the validity of claim 1 of the '817 patent. The jury returned a verdict in favor of Honeywell, finding that claim 1 of the '817 patent was invalid for being anticipated and obvious. (D.I. 366) Currently before the court is Solvay's motion for judgment as a matter of law of no

¹Original co-defendant "Honeywell Specialty Materials, LLC" was dismissed by stipulation of the parties on September 17, 2007. (D.I. 81)

anticipation and no obviousness (D.I. 374) as well as Solvay's motion for a new trial (D.I. 375).

II. BACKGROUND

The court presumes familiarity with the chemical processes at issue in this case, as detailed in its prior opinion. (D.I. 229) In short, the '817 patent, which has a priority date of October 23, 1995, discloses and claims processes for making 1,1,1,3,3-pentafluoropropane ("HFC-245fa") by reacting 1,1,1,3,3-pentachloropropane ("HCC-240fa") with hydrogen fluoride ("HF") in the presence of a hydrofluorination catalyst. The claimed process for making HFC-245fa involves continuously drawing off gaseous HFC-245fa and hydrogen chloride ("HCl") from the reaction mixture. Specifically, independent claim 1 of the '817 patent reads:

In a process for the preparation of [HFC-245fa] comprising reaction of [HCC-240fa] with [HF] in the presence of a hydrofluorination catalyst, the improvement which comprises carrying out the reaction at a temperature and under a pressure at which [HFC-245fa] is gaseous and isolating said [HFC-245fa] from the reaction mixture by drawing off [HFC-245fa] and [HCl] in a gaseous phase as each of said [HFC-245fa] and [HCl] is being formed.

('817 patent at col. 5:36-46)

On July 11, 1994, Honeywell filed a patent application that later issued as U.S. Patent No. 5,574,192 ("the '192 patent"). The '192 patent claims a process for making HFC-245fa by reacting HCC-240fa with HF in the presence of a catalyst. (D.I. 286, ex. 3) Solvay amended the '817 patent to claim an improvement over the '192 patent which relates to withdrawing HFC-245fa from the reactor continuously as it is being formed. (D.I. 136, ex. 13)

In early 1994, Honeywell entered into a research contract with the Russian Scientific Center for Applied Chemistry (“RSCAC”), pursuant to which the RSCAC performed process development studies in Russia for the production of HFC-245fa.² (D.I. 264 at 3) In July 1994, the RSCAC sent a report to Honeywell documenting that it had achieved liquid-phase synthesis of HFC-245fa from HCC-240fa using a continuous process (“July 1994 report”). (D.I. 136, ex. 5 at 6-7) Honeywell used the report to duplicate the RSCAC’s experiments in the United States, which the court determined qualified as reduction to practice under § 102(g) as a matter of law. (D.I. 299 at 8) In May 1994, prior to sending its report to Honeywell, the RSCAC filed a Russian patent application, which the jury determined disclosed the RSCAC’s invention as claimed by the ‘817 patent. (D.I. 366) This patent application ultimately issued as Russian Patent No. RU 2,065,430 (“the ‘430 patent”).

III. STANDARDS

A. Motion for Judgment as a Matter of Law

To prevail on a renewed motion for judgment as a matter of law following a jury trial, the moving party “must show that the jury’s findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusions implied [by] the jury’s verdict cannot in law be supported by those findings.” *Pannu v. lolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (quoting *Perkin-Elmer Corp. v. Computervision Corp.*, 732 F.2d 888, 893 (Fed. Cir. 1984)). “‘Substantial’ evidence is such relevant evidence from the record taken as a whole as might be acceptable by a

² A detailed description of the facts relevant to the RSCAC’s involvement is set forth in the court’s previous opinion. (D.I. 230)

reasonable mind as adequate to support the finding under review.” *Perkin-Elmer Corp.*, 732 F.2d at 893. In assessing the sufficiency of the evidence, the court must give the non-moving party, “as [the] verdict winner, the benefit of all logical inferences that could be drawn from the evidence presented, resolve all conflicts in the evidence in his favor, and in general, view the record in the light most favorable to him.” *Williamson v. Consol. Rail Corp.*, 926 F.2d 1344, 1348 (3d Cir. 1991); *Perkin-Elmer Corp.*, 732 F.2d at 893. The court may not determine the credibility of the witnesses nor “substitute its choice for that of the jury between conflicting elements of the evidence.” *Perkin-Elmer Corp.*, 732 F.2d at 893. In summary, the court must determine whether the evidence reasonably supports the jury's verdict. See *Dawn Equip. Co. v. Ky. Farms Inc.*, 140 F.3d 1009, 1014 (Fed. Cir. 1998).

B. Motion for a New Trial

The decision to grant or deny a new trial is within the sound discretion of the trial court and, unlike the standard for determining judgment as a matter of law, the court need not view the evidence in the light most favorable to the verdict winner. See *Allied Chem. Corp. v. Daiflon, Inc.*, 449 U.S. 33, 36 (1980). Federal Rule of Civil Procedure 59(a) provides, in pertinent part:

A new trial may be granted to all or any of the parties and on all or part of the issues in an action in which there has been a trial by jury, for any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States.

New trials are commonly granted in the following situations: (1) where the jury's verdict is against the clear weight of the evidence, and a new trial must be granted to prevent a miscarriage of justice; (2) where newly-discovered evidence exists that would likely alter

the outcome of the trial; (3) where improper conduct by an attorney or the court unfairly influenced the verdict; or (4) where the jury's verdict was facially inconsistent. See *Zarow-Smith v. N.J. Transit Rail Operations*, 953 F. Supp. 581, 584 (D.N.J. 1997) (citations omitted). The court, however, must proceed cautiously, and not substitute its own judgment of the facts and the credibility of the witnesses for the jury's independent evaluation. Nevertheless,

[w]here a trial is long and complicated and deals with a subject matter not lying within the ordinary knowledge of jurors a verdict should be scrutinized more closely by the trial judge than is necessary where the litigation deals with material which is familiar and simple, the evidence relating to ordinary commercial practices. An example of subject matter unfamiliar to a layman would be a case requiring a jury to pass upon the nature of an alleged newly discovered organic compound in an infringement action.

Lind. v. Schenley Indus. Inc., 278 F.2d 79, 90-91 (3d Cir. 1960).

IV. DISCUSSION

A. Renewed Motion for Judgment as a Matter of Law

Solvay moves for judgment as a matter of law on the issue of validity of claim 1 of the '817 patent, arguing that the jury erred in finding that: (1) claim 1 of the '817 patent is invalid as anticipated by the '192 patent; (2) the RSCAC disclosed its invention in its May 1994 Russian patent application; and (3) claim 1 of the '817 patent is invalid as obvious. (D.I. 366)

1. Anticipation

a. Standard

A patent is presumed valid and the burden of proving invalidity rests with the challenger. See 35 U.S.C. § 282. In order to overcome this presumption, the party

challenging validity bears the burden of proving, by clear and convincing evidence, that the invention fails to meet the requirements of patentability. See *Hewlett-Packard Co. v. Bausch & Lomb*, 909 F.2d 1464, 1467 (Fed. Cir. 1990). Clear and convincing evidence is evidence that “could place in the ultimate factfinder an abiding conviction that the truth of [the] factual contentions [is] ‘highly probable.’” *Colorado v. New Mexico*, 467 U.S. 310, 316 (1984).

An anticipation inquiry involves two steps. First, the court must construe the claims of the patent in suit as a matter of law. See *Key Pharms. v. Hercon Labs. Corp.*, 161 F.3d 709, 714 (Fed. Cir. 1998). Second, the finder of fact must compare the construed claims against the prior art. *Id.*

Proving a patent invalid by anticipation “requires that the four corners of a single, prior art document describe every element of the claimed invention, either expressly or inherently, such that a person of ordinary skill in the art could practice the invention without undue experimentation.” *Advanced Display Sys. Inc. v. Kent State Univ.*, 212 F.3d 1272, 1282 (Fed. Cir. 2000) (citations omitted). The Federal Circuit has stated that “[t]here must be no difference between the claimed invention and the referenced disclosure, as viewed by a person of ordinary skill in the field of the invention.” *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991). The elements of the prior art must be arranged or combined in the same manner as in the claim at issue, but the reference need not satisfy an *ipsissimis verbis* test. *In re Gleave*, 560 F.3d 1331, 1334 (Fed. Cir. 2009) (citations omitted). “In determining whether a patented invention is [explicitly] anticipated, the claims are read in the context

of the patent specification in which they arise and in which the invention is described.”
Glaverbed Societe Anonyme v. Northlake Mktg. & Supply, Inc., 45 F.3d 1550, 1554
(Fed. Cir. 1995).

b. Discussion

The jury found claim 1 of Solvay’s ‘817 patent invalid as being anticipated in view of the ‘192 patent. (D.I. 366) The crux of Solvay’s argument is that the ‘192 patent does not anticipate because it does not disclose a continuous process for venting HFC-245fa and HCl, a critical limitation of the ‘817 patent. (D.I. 381 at 4) Solvay presents several arguments in support of this assertion. First, Solvay contends that example 3 of the ‘192 patent shows periodic rather than continuous venting, as admitted by various witnesses including Dr. Michael Doherty (“Doherty”), Honeywell’s technical expert, and Dr. Michael VanDerPuy (“VanDerPuy”), the inventor of the ‘192 patent. (*Id.*; Tr. 1014:12-17; Tr. 590:10-19) Second, Solvay argues that two sections of the specification of the ‘192 patent which contain the word “continuous” do not, when read in context, disclose a continuous process. (D.I. 381 at 6) Finally, Solvay contends that not only did VanDerPuy not have the equipment necessary to make the process continuous at the time the patent was written, but Honeywell later approached the RSCAC with the intent of obtaining its help in making the process continuous. (*Id.* at 8)

Substantial evidence supports the jury’s verdict of anticipation. With respect to Solvay’s first contention, Honeywell concedes that example 3 discloses periodic rather than continuous venting. (D.I. 385 at 6) Honeywell contends, however, that other sections of the patent do disclose continuous operation. (*Id.*) As proposed by

Honeywell, disclosure of continuous operation occurs instead in the two sections of the specification that contain the word “continuous.” (*Id.* at 3-4) The first of these sections reads:

It may be advantageous to periodically regenerate the catalyst due to the dissociation of the pentavalent catalyst over time. This may be accomplished by any means well known in the art. The catalyst may be regenerated, for example, by adding chlorine. . . The chlorine, which is **continuously** added to the process of this invention when operating in a **continuous mode** (and periodically added when operating in a batch mode), oxidizes the catalyst from the trivalent to the pentavalent state.

(‘192 patent at col. 3:22-38) (emphasis added) The second section reads:

HFC-245fa may be recovered from the mixture of unreacted starting materials, by-products, and catalyst by any means known in the art, such as distillation and extraction. As illustrated in Example 3, at the end of the heating period, i.e. the amount of time for complete reaction in batch mode operations, the fluorination reaction product and remaining HF may be vented . . . Alternatively, unreacted HF and organics may be vented and condensed, and the HF layer recycled to the reactor . . . This isolation procedure is particularly useful for a **continuous fluorination process**.

(*Id.* at col. 3:55-col. 4:1) (emphasis added) VanDerPuy and Doherty testified that both sections disclose continuous embodiments of the invention. (Tr. 586:23-589:15; Tr. 1017:14-1018:14) Solvay argues that this testimony is conclusory and takes the word “continuous” out of context. (D.I. 381 at 6) Solvay cites the testimony of its expert, Dr. William Dolbier (“Dolbier”), in which Dolbier claims the second section of the specification does not refer to the isolation of HFC-245fa and HCl, but rather addresses a means for recycling under-fluorinated products. (Tr. 1331:12-1332:3)

Despite this conflicting testimony, the court will not disrupt the jury’s verdict because it is up to the jury “to determine the experts’ credibility and weigh the evidence

appropriately.” *Belden Technologies Inc. v. Superior Essex Communications LP*, 802 F. Supp. 2d 555, 563 (D. Del. 2011); see also *ArcelorMittal France v. AK Steel Corp.*, 811 F. Supp. 2d 960, 967 (D. Del. 2011) (“[T]he jury was free to give whatever weight it felt appropriate to the testimony of the various experts and fact witnesses.”).

The parties also dispute Solvay’s third contention that VanDerPuy did not have the capability to run the reaction continuously and that Honeywell approached the RSCAC in order to obtain help in making the process continuous. Honeywell argues that it approached the RSCAC “because resources were tied up on other projects, not because of any technical incapability to run the ‘192 patent process continuously.” (D.I. 385 at 7) Regardless of the true motivation for approaching the RSCAC, the dispute does not affect the ultimate determination of anticipation because the jury found that the ‘192 patent constitutes constructive reduction to practice of the invention, thus negating a need to find actual reduction to practice. See *In re Donohue*, 766 F.2d 531, 533 (Fed. Cir. 1985) (“It is not . . . necessary that an invention disclosed in a publication shall have actually been made in order to satisfy the enablement requirement.”). Because the court affirms the jury’s verdict as to anticipation, it need not further consider the dispute over actual reduction to practice.

2. Disclosure under 102(g)

a. Standard

Patent protection is denied under § 102(g) if “before the applicant’s invention thereof the invention was made in this country by another who had not abandoned, suppressed, or concealed it.” 35 U.S.C. § 102(g). The date of invention for purposes

of § 102(g) is the date that claimed invention is “reduced to practice” 3 D. Chisum, *Patents* § 10.03[1], at 10-21 (1993). Reduction to practice occurs when the inventor knows that the product will “actually work [] for its intended purpose.” *Newkirk v. Lulejian*, 825 F.2d 1581, 1582 (Fed. Cir. 1987). Even if a similar invention is reduced to practice before the patented device, it will not be found to “anticipate” that device under § 102(g) unless it “meet[s] every element of the claimed invention[.]” *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 1379 (Fed. Cir. 1986).

b. Discussion

Prior to trial, the court found that “as a matter of law, the RSCAC qualifies as ‘another inventor’ who reduced the invention to practice ‘in this country.’” (D.I. 299 at 6) The sole issue presented to the jury was whether the RSCAC disclosed its invention in its May 1994 patent application, thus invalidating the ‘817 patent. (D.I. 366) In support of its contention that the RSCAC work was not disclosed, Solvay identifies numerous differences in the equipment, results and reaction conditions between the RSCAC’s July 1994 report to Honeywell and the ‘430 patent. (D.I. 381 at 9-10) Solvay is particularly concerned with the lack of disclosure in the ‘430 patent of a “liquid line,” or means of collecting the liquid HFC-245fa product as it leaves the condenser. (*Id.* at 10-11) Solvay also contends that the ‘430 patent does not disclose the continuous drawing off of HFC-245fa and HCl gas. (*Id.* at 11-12)

Honeywell responds that the discrepancies cited by Solvay are largely irrelevant because they are not part of the invention as claimed in the ‘817 patent. (D.I. 385 at 10) The primary point of confusion, therefore, is that Solvay understands the invention

to be every aspect of the synthesis as disclosed in the RSCAC July 1994 report and Honeywell understands the invention to be limited to how it is claimed in the '817 patent. The court agrees with Honeywell that the invention at issue necessarily relates to the disputed '817 patent, and failure to disclose unclaimed elements is irrelevant to the 102(g) inquiry. See *Sandt Technology, Ltc. v. Resco Metal and Plastics Corp.*, 264 F.3d 1344, 1350 (Fed. Cir. 2001) (“A prior art device can anticipate a **claimed** invention under §102(g)(2) if it was conceived and reduced to practice prior to the filing date of the patent.”) (emphasis added). This is consistent with the court’s previous articulation of the nature of the 102(g) dispute as being over whether the RSCAC’s May 1994 patent application “discloses the subject matter of the '817 patent.” (D.I. 299 at 10) For this reason, the court does not consider Solvay’s arguments relating to various unclaimed elements, including the “liquid line.”³

Of greater relevance is Solvay’s contention that the '430 patent does not disclose continuous drawing off of gaseous product. (D.I. 381 at 11-12) Solvay seeks to discredit Doherty’s testimony that example 8⁴ of the '430 patent discloses “a continuous

³ The court is similarly disinclined to consider arguments relating to the “liquid line” in the context of Solvay’s objection to the jury instructions on inherent disclosure in its motion for a new trial. (D.I. 379 at 15-16). See *McKesson Automation, Inc. v Swisslog Italia S.p.A.*, 840 F. Supp. 2d 801, 812 (D. Del. 2012) (“Because the first issue was argued and addressed in the context of plaintiff’s [judgment as a matter of law] motion, the court will address it no further” in the context of the motion for a new trial).

⁴ Solvay argues that example 1 of the '430 patent also fails to disclose a continuous process. (D.I. 387 at 5) Honeywell responds that Doherty testified that “a person of ordinary skill” would reach the opposite conclusion. (Tr. 1059:8-9) “[E]vidence [of anticipation] must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” *Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1267-68 (Fed. Cir. 1991) (citing *In re Oelrich*, 666 F.2d 578, 581

process with continuous feeds, continuous gaseous separation and withdrawal, drawing off, of the reaction products HCl and [HFC-245fa].” (Tr. 1026:20-23) Solvay claims that, not only is there is no evidentiary basis for Doherty’s statement, but its own expert Dolbier testified that “one assumes that . . . one isolates the product in the same manner [for each example], at the end of the reaction.” (Tr. 1336:3-5) Honeywell responds by citing additional testimony from Doherty in which he explains the scientific basis for his conclusion (Tr. 1033:13-24) and references corroborating scientific testimony from Dr. Vincent Wilmet, a named inventor on the ‘817 patent (Tr. 1027:9-21). Honeywell also cites testimony from Dolbier in which he concedes that HFC-245fa leaves the reaction mixture during the reaction, albeit temporarily. (Tr. 1372:3-18) Ultimately, the jury was free to weigh Doherty’s testimony against that of Dolbier, and the court will not alter the verdict. *See ArcelorMittal France*, 811 F. Supp. 2d at 967.

3. Obviousness

a. Standard

“A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.” 35 U.S.C. § 103(a). Obviousness is a question of law, which depends on underlying factual inquiries.

(C.C.P.A. 1981). Doherty’s testimony fulfills its role of “educat[ing] the decision-maker to what the reference meant to persons of ordinary skill in the field of the invention” and, in conjunction with his testimony concerning example 8, properly supports the jury’s verdict. *Scripps Clinic & Research Found.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991).

Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or nonobviousness of the subject matter is determined. Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.

KSR Int'l Co. v. Teleflex Inc., 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966)).

“[A] patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art.” *KSR*, 550 U.S. at 418. Likewise, a defendant asserting obviousness in view of a combination of references has the burden to show that a person of ordinary skill in the relevant field had a reason to combine the elements in the manner claimed. *Id.* at 418-19. The Supreme Court has emphasized the need for courts to value “common sense” over “rigid preventative rules” in determining whether a motivation to combine existed. *Id.* at 419-20. “[A]ny need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed.” *Id.* at 420. In addition to showing that a person of ordinary skill in the art would have had reason to attempt to make the composition or device, or carry out the claimed process, a defendant must also demonstrate that “such a person would have had a reasonable expectation of success in doing so.”

PharmaStem Therapeutics, Inc. v. ViaCell, Inc., 491 F.3d 1342, 1360 (Fed. Cir. 2007).

A combination of prior art elements may have been “obvious to try” where there existed “a design need or market pressure to solve a problem and there [were] a finite

number of identified, predictable solutions” to it, and the pursuit of the “known options within [a person of ordinary skill in the art’s] technical grasp” leads to the anticipated success. *Id.* at 421. In this circumstance, “the fact that a combination was obvious to try might show that it was obvious under § 103.” *Id.* Federal Circuit precedent has also established that “[s]tructural relationships may provide the requisite motivation or suggestion to modify known compounds to obtain new compounds,” and that particular types of structural similarity can give rise to a case of prima facie obviousness.

Genetics Institute, LLC v. Novartis Vaccines and Diagnostics, Inc., 655 F.3d 1291, 1312 (Fed. Cir. 2011) (citing *In re Deuel*, 51 F.3d 1552, 1558 (Fed. Cir. 1995)).

A court is required to consider secondary considerations, or objective indicia of nonobviousness, before reaching an obviousness determination, as a “check against hindsight bias.” See *In re Cyclobenzaprine Hydrochloride Extended-Release Capsule Patent Litig.*, 676 F.3d 1063, 1079 (Fed. Cir. Apr. 16, 2012). “Such secondary considerations as commercial success, long felt but unsolved needs, failure of others, etc., might be utilized to give light to the circumstances surrounding the origin of the subject matter sought to be patented.” *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966).

“Because patents are presumed to be valid, see 35 U.S.C. § 282, an alleged infringer seeking to invalidate a patent on obviousness grounds must establish its obviousness by facts supported by clear and convincing evidence.” *Kao Corp. v. Unilever U.S., Inc.*, 441 F.3d 963, 968 (Fed. Cir. 2006) (citation omitted). In conjunction with this burden, the Federal Circuit has explained that,

[w]hen no prior art other than that which was considered by the PTO examiner is relied on by the attacker, he has the added burden of overcoming the deference that is due to a qualified government agency presumed to have properly done its job, which includes one or more examiners who are assumed to have some expertise in interpreting the references and to be familiar from their work with the level of skill in the art and whose duty it is to issue only valid patents.

PowerOasis, Inc. v. T-Mobile USA, Inc., 522 F.3d 1299, 1304 (Fed. Cir. 2008) (quoting *Am. Hoist & Derrick Co. v. Sowa & Sons*, 725 F.2d 1350, 1359 (Fed. Cir. 1984)).

b. Discussion

The jury found that claim 1 of the '817 patent was invalid for being obvious to a person of ordinary skill in the art at the time of the claimed invention in view of the prior art. (D.I. 366) During trial, Honeywell relied on two pieces of prior art for its obviousness arguments: (1) the '192 patent; and (2) U.S. Patent No. 5,202,509 ("the '509 patent"), entitled "Catalysts for Liquid Phase Fluorination" (DTX 330). Solvay argues that these two pieces of prior art are not properly combined to support a finding of obviousness and, even if they were, Honeywell did not meet its burden of proof at trial by simply repeating the obviousness rejection that was before the United States Patent and Trademark Office ("PTO").⁵ (D.I. 381 at 13-20)

The '509 patent discloses a fluorination process in which HCl and a fluorinated product are "extract[ed] continuously [in] a gaseous phase." ('509 patent at col. 3:58-

⁵ Solvay's argument that the '192 patent was before the examiner in the form of the preamble to claim 1 and that the '509 patent was "cumulative to the art" considered by the examiner is unpersuasive. (D.I. 387 at 6-7) Even if both patents had been considered by the examiner, the court is "never bound by an examiner's finding in an ex parte patent application proceeding." *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1359 (Fed. Cir. 2007). Indeed, "[t]o treat the presumption as irrebuttable would be to oust the courts of their jurisdiction to consider a challenge to the validity of patents before them." *Chore-Time Equipment, Inc. v. Cumberland Corp.*, 713 F.2d 774, 780 (Fed. Cir. 1983).

61) Both parties agree that the '509 patent mentions continuous extraction of fluorinated products in a gaseous phase, but Solvay asserts that it fails to disclose continuous fluorination of a terminal dichloromethyl group as in the '817 patent. (D.I. 385 at 13; D.I. 387 at 8) Solvay further argues that the '509 patent demonstrates the difficulty of performing fluorination of a terminal dichloromethyl group and that the patent, therefore, is improperly considered for guidance on how to convert the '192 process, which discloses this technically difficult reaction, into a continuous process. (D.I. 387 at 7-8) Honeywell responds that a person of ordinary skill would reasonably be expected to apply the known technique of continuous fluorination disclosed in the '509 patent to the known chemical reaction disclosed in the '192 patent. (D.I. 385 at 15)

The jury heard testimony from Doherty that combining the prior art elements would be obvious and would be expected to be successful. (Tr. 1023:10-14) (“[W]hen you combine the '192 patent which specifically tells us the chemistry . . . together with the '509, in my judgment, a person of ordinary skill in the art would know exactly what to do.”) The jury heard additional testimony that similar chlorocarbons had been fluorinated via a continuous process prior to the invention of the '817 patent. (Tr. 1210:17-1211:4; 1293:11-1294:12) The jury also heard testimony that continuous processes provide various benefits such as allowing reaction products to be readily separated from the raw materials (Tr. 481:5-482:17) and facilitating large-scale commercial production (Tr. 1367:8-16; 584:18-22; 595:15-596:15). Solvay responds that the expectation of success was low given the difficulty of the chemistry but does not rebut the testimony concerning the motivation to combine the prior art. (D.I. 387 at

7) Substantial evidence supports the jury's verdict, and it was up to the jury to determine the experts' credibility and weigh the evidence appropriately.

B. Motion for a New Trial

1. Claim construction

a. Changes to claim construction during trial

In its December 9, 2008 *Markman* order, the court interpreted the reaction in claim 1 as occurring “at a temperature and under a pressure whereby HFC-245fa and HCl are produced in gaseous form and separated from the reaction mixture in a gas stream[.]” (D.I. 228 at 4) In the final jury instructions, the court construed the same portion of claim 1 to read, “the improvement which comprises carrying out the reaction at a temperature and under a pressure whereby HFC-245fa and HCl are produced in gaseous form and **continuously separated or drawn off** from the reaction mixture in a gas stream[.]” (D.I. 365 at 18) (emphasis added) The new construction added the words “continuously” and “or drawn off,” as emphasized above. (D.I. 228 at 4) Solvay is concerned that the inclusion of “or drawn off” led to an interpretation that HFC-245fa need only leave the reactor, whereas the proper interpretation is that HFC-245fa must also leave the distillation column and condenser assembly.⁶ (D.I. 379 at 4) Solvay cites the following documents as evidence that adding “or drawn off” is inconsistent with how the court and the parties originally construed claim 1: (1) Honeywell's opening

⁶ Solvay's argument that Honeywell incorrectly claimed that isolation of HFC-245fa may occur entirely within the reactor (D.I. 379 at 5) is unsupported by evidence. Rather, the transcript shows that Honeywell took the position that HFC-245fa must leave the reactor, arguing that “the language of the claim construction is clear that by ‘gas stream’ . . . it means it's going out of the reactor.” (Tr. 946:16-18)

brief to the Federal Circuit (D.I. 380, ex. A at 11); (2) the portion of the court's December 9, 2008 *Markman* order distinguishing the '817 patent from the '192 patent (D.I. 228 at 6); and (3) the '817 and '192 patent specifications (D.I. 379 at 5-10). Solvay argues that the amended jury instructions resulted in multiple interpretations of claim 1 being presented to the jury. (D.I. 379 at 13-14)

The threshold issue is whether Solvay properly objected to the change in instructions, thereby preserving its right to raise the instruction as grounds for a new trial. "A party seeking to set aside a judgment based on erroneous jury instructions must establish that '(1) it made a proper and timely objection to the jury instructions, (2) those instructions were legally erroneous, (3) the errors had prejudicial effect, and (4) it requested alternative instructions that would have remedied the error.'" *Seachange Intern., Inc. v. C-COR, Inc.*, 413 F.3d 1361, 1381 (Fed. Cir. 2005); see also *Abbott Laboratories v. Syntron Bioresearch, Inc.*, 334 F.3d 1343, 1352 (Fed. Cir. 2003) (holding that patentee waived his right to challenge the correctness of claim construction contained in jury instructions "by agreeing to that portion of the adopted construction").

Solvay did object to the jury instructions, but only with respect to the exclusion of the wording "as each of said [HFC-245fa] and [HCl] is being formed" and not with respect to the inclusion of "continuously" or "or drawn off." (D.I. 355) Solvay did not object to the addition of these two elements to the claim construction in its notice of objections to the final jury instruction (D.I. 360), and it did not raise any objection before the instructions were read to the jury. (Tr. 1390:7-14) Indeed, Solvay conceded that the version of the claim construction including the words "continuously" and "or drawn

off” was consistent with the court’s previous construction. (Tr. 945:11-17) When there is no objection, “the question devolves into whether an error occurred in the conduct of the trial that was so grievous as to have rendered the trial unfair.” *Eolas Technologies Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1338 (Fed. Cir. 2005). The court detects no grievous unfairness and finds that the instructions “properly guided the jury.” *Id.*

b. The “comprising” instruction

Solvay disputes the following jury instruction on the meaning of the term “comprising” in claim 1 of the ‘817 patent:

Claim 1 of the ‘817 patent uses the transitional term ‘comprises.’ ‘Comprises’ is interpreted the same as ‘includes’ or ‘contains.’ In a patent claim, comprises means that the claim is open-ended, that is, the claim is not limited to a process that includes only what is in the claim and nothing else. If you find that the prior art includes all of the limitations of claim 1, the fact that it may also include additional elements is irrelevant. The presence of additional elements or steps that may occur after the steps in the claim does not mean that the prior art does not invalidate claim 1.

(D.I. 365 at 19) Solvay contends that this instruction “conveyed to the jury that [c]laim 1 covers situations in which [HFC-245fa] temporarily leaves the reactor and returns.” (D.I. 379 at 12)

The court’s instruction is consistent with the “well understood” definition of comprising as “including but not limited to.” *Exergen Corp. v. Wal-Mart Stores, Inc.*, 575 F.3d 1312, 1319 (Fed. Cir. 2009); *see also Glaxo Group LTD v. Teva Pharmaceuticals USA, Inc.*, 2009 WL 122054, at *2 (D. Del. Apr. 30, 2009) (adopting standard jury instructions on the definition of comprising, holding that comprising “is a term of art used in claim language which means that the named elements are essential,

but other elements may be added and still form a construct within the scope of the claim) (internal quotations omitted)). Solvay's attempts to argue that the instruction allowed Honeywell to abrogate claim limitations is contrary to the Federal Circuit's position that "[i]t is neither a 'shortcoming' nor a 'weaseling' to use 'comprising' to recognize that inventions may be practiced with steps in addition to those listed in the claims." *Smith & Nephew, Inc. v. Ethicon, Inc.*, 276 F.3d 1304, 1311 (Fed. Cir. 2001). Therefore, the court discerns no error in submitting its instruction.

2. Prior invention under § 102(g)

a. Jury instructions, verdict sheet and opening statements

Solvay argues that the jury instructions "improperly conveyed to the jury that the '430 [patent] is prior art that can anticipate [c]laim 1[.]" (D.I. 379 at 15) Solvay cites, inter alia, a section of the instructions that reads, "Honeywell contends that claim 1 of the '817 patent is not new as anticipated by . . . the RSCAC's May 1994 patent application." (D.I. 365 at 24) However, the only question actually presented to the jury for adjudication was whether "claim 1 of the '817 patent is invalid as being anticipated in view of [the '192 patent]" (D.I. 366), and the jury was given no opportunity to find anticipation based on the '430 patent application alone or in conjunction with the '192 patent. A proper jury verdict should not be disturbed for harmless error, here, the inadvertent inclusion of a theory in the "background" section of the instructions, where "it is highly probable that the error did not affect the outcome of the case." *Forrest v. Beloit Corp.*, 424 F.3d 344, 349 (3d Cir. 2005); see also *Siemens Med. Solutions USA, Inc. v. Saint-Bogain Ceramics & Plastics, Inc.*, 637 F.3d 1269, 1278 (Fed. Cir. 2011)

("[A] jury verdict will be set aside, based on erroneous jury instructions, if the movant can establish that those instructions were legally erroneous and that the errors had prejudicial effect."). When considered as a whole, the court finds that the jury instructions did not have a prejudicial effect on the outcome of the trial given that the jury was not permitted to find anticipation based on the '430 patent application.

Solvay argues that another section of the jury instructions improperly "conveyed that Honeywell could rebut Solvay's showing of suppression or concealment by merely showing that the RSCAC work was disclosed in the RSCAC's [July] 1994 report to Honeywell." (D.I. 379 at 16-17) However, the instructions clearly state that "Honeywell relies on the RSCAC's May 1994 patent application to support the assertion that the RSCAC disclosed its prior invention in such application[.]" (D.I. 365 at 26) This language directly contradicts Solvay's assertion that the instructions improperly convey that the July 1994 report (rather than the May 1994 patent application) can fulfill the § 102(g) disclosure requirement.

A plain reading of the relevant text also diminishes Solvay's next argument that the verdict sheet "suggest[ed] that because the RSCAC filed the '430 [patent], it necessarily disclosed an invention it made in the '430 [patent]." (D.I. 379 at 17) The verdict sheet asks whether "the RSCAC disclosed its invention in its May 1994 patent application" and does not otherwise imply that the act of filing the patent application constitutes disclosure. (D.I. 366) Accordingly, the court finds no prejudicial error that would justify a new trial.

Finally, Solvay contends that Honeywell's opening statements misled the jury into evaluating Honeywell's duplication of the RSCAC's invention under §102(g) despite

the fact that the Federal Circuit determined that Honeywell does not qualify as “another inventor.” See *Solvay*, 622 F.3d at 1379 (Fed. Cir. 2010). Solvay specifically takes issue with Honeywell’s statement that the “RSCAC did [the invention] first, Honeywell did it second, and the latest, and Solvay was third.” (Tr. 157:1-3; see also Tr. 156:20-25) The court finds that Honeywell’s statements are factually accurate, as it is undisputed that “Honeywell used the information that RSCAC had provided to duplicate RSCAC’s experiments.” *Solvay*, 622 F.3d at 1371-72 (Fed. Cir. 2010). Furthermore, the jury was clearly instructed that “the lawyer’s statements and arguments are not evidence” and that they are to make a decision “based only on the evidence...and nothing else.” (D.I. 365 at 3) Therefore, Honeywell’s statements do not justify a new trial.

b. Exclusion of evidence

Solvay claims prejudicial error in the court’s decision to grant Honeywell’s motion *in limine* to exclude statements made by an attorney during the prosecution of U.S. Patent No. 7,214,839 (“the ‘839 patent”). The court previously determined that the ‘839 patent “is not related to any patent in this case.” (D.I. 329 at 1) Despite Solvay’s protestation that the attorney’s statements are relevant because they are “directly contrary to Honeywell’s litigation positions” (D.I. 379 at 20), the court maintains that “the marginal relevance of the evidence is far outweighed by the danger of unfair prejudice, confusion of the issues, misleading the jury and wasting the limited time of the parties explaining the satellite patent prosecutions.” (D.I. 329 at 2) In its initial determination to exclude the evidence, the court properly used its “broad discretion” under Federal Rule

of Evidence 403 to “balance between the relevance and prejudice” of the evidence, and the court is not presently persuaded that this decision was improperly made. *United States v. Long*, 574 F.2d 761, 770 (3d Cir. 1978).

V. CONCLUSION

For the foregoing reasons, the court denies plaintiff’s renewed motion for judgment as a matter of law (D.I. 374) and motion for a new trial (D.I. 375). An appropriate order shall issue.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

SOLVAY, S.A.,)
)
 Plaintiff,)
)
 v.) Civ. No. 06-557-SLR
)
)
 HONEYWELL INTERNATIONAL INC.,)
)
 Defendant.)

ORDER

At Wilmington this 20th day of August, 2012, consistent with the memorandum opinion issued this same date;

IT IS ORDERED that plaintiff's renewed motion for judgment as a matter of law (D.I. 374) and plaintiff's motion for a new trial (D.I. 375) are denied.


United States District Judge