

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 106

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

JOHN D. SCOTT and RACHEL A. STEVEN
Junior Party,¹

v.

SATOSHI KOYAMA, YUKIO HOMOTO and NAOKI ESAKA
Junior Party,²

Patent Interference No. 103,635

Final Hearing: August 14, 2000

Before CAROFF, DOWNEY, and LORIN, Administrative Patent Judges.

LORIN, Administrative Patent Judge.

Scott et al. (Scott) has been accorded a priority date of March 29, 1991.³ Koyama

¹ Application 07/804,550, filed December 11, 1991, now U.S. Patent 5,243,105, granted December 7, 1993. Assignor to Imperial Chemical Industries, PLC.

² Application 08/282,564, filed July 29, 1994. Assignor to Daikin Industries, Ltd.

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et al. (Koyama) has been accorded a priority date of March 13, 1990.⁴ By virtue of the earlier priority date of March 13, 1990, Koyama is designated the senior party in this interference. 37 C.F.R. §§ 1.657 and 1.601(m).

Count 1, the sole count at issue, reads as follows:

Count 1

In a method for producing 1,1,1,2-tetrafluoroethane⁵ in two reaction stages involving (1) the reaction of trichloroethylene and hydrogen fluoride to produce 1,1,1-trifluorochloroethane and (2) the reaction of 1,1,1-trifluorochloroethane with hydrogen fluoride to produce 1,1,1,2-tetrafluoroethane:

carrying out the reaction (2) between 1,1,1-trifluorochloroethane and hydrogen fluoride at a temperature in the range of 300⁰C to 400⁰C,

carrying out the reaction (1) between 1,1,1-trichloroethylene and hydrogen fluoride at a temperature in the range of 180⁰C to 300⁰C and

recycling unconverted 1,1,1-trifluoroethane with hydrogen fluoride for further reaction in the presence of trichloroethylene.

or

In a method for producing 1,1,1,2-tetrafluoroethane in two reaction stages involving (1) the reaction of trichloroethylene and hydrogen fluoride to produce 1,1,1-trifluoro-2-chloroethane and (2) the reaction of 1,1,1-trifluoro-2-chloroethane with hydrogen fluoride to produce 1,1,1,2-tetrafluoroethane, the improvement which comprises carrying out the reaction (2) between 1,1,1-trifluoro-2-chloroethane and hydrogen fluoride at a temperature in the range of 280-450⁰ C., carrying out the reaction (1) between trichloroethylene and hydrogen fluoride at a temperature in the range 200⁰-400⁰ C., and below that used in reaction (2), and recycling unconverted 1,1,1-trifluoro-2-chloroethene [sic] with hydrogen

³ Scott was accorded benefit of U.S. Serial No. 07/676,703, filed March 29, 1991, now abandoned. Order, paper no. 2, mailed October 5, 1995. Paper No. 1.

⁴ Koyama was accorded benefit of Japan 2-61811, filed March 13, 1990. Koyama was also accorded benefit of U.S. Serial Nos. 08/187,520, filed January 28, 1994; 08/009,420, filed January 27, 1993, now U.S. Patent No. 5,334,786, granted August 2, 1994; 07/912,139, filed July 9, 1992, now abandoned; 07/668,121, filed March 12, 1991, now abandoned; and Japan 2-285596, filed October 22, 1990. Order, paper no. 2, mailed October 5, 1995. Paper No. 1.

⁵ Also known as "R 134a."

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fluoride for further reaction in the presence of trichloroethylene.

The claims of the parties which correspond to this count are:

Scott et al. : claims 1-12⁶

Koyama et al. : claim 7

The parties filed the following briefs and reply briefs:

SB⁷ Scott brief, filed October 29, 1997 (paper no. 86)

KB Koyama brief, filed December 12, 1997 (paper no. 90)

SRB Scott Reply Brief, filed January 26, 1998 (paper no. 99).

Koyama filed a Record (paper no. 91, filed December 12, 1997) and Exhibits (paper no. 93, filed December 12, 1997). Scott filed a record with Testimony (paper no. 92, filed December 12, 1997) and Exhibits (paper no. 94, filed December 12, 1997). Both parties appeared at final hearing represented by counsel.

ISSUES

No issue of no interference-in-fact was raised in the briefs at final hearing.

The issues presented for our decision include Scott's motion⁸, the parties cases for

⁶ The Scott claims corresponding to the count originally included claim 13 (paper no. 1) but it was later disclaimed (paper no. 33). Scott et al.'s disclaimer of claim 13 was acknowledged in the Decision on Motions (paper no. 47).

⁷ Hereinafter, the briefs and reply briefs will be designated by these abbreviations followed by page number.

⁸ Koyama filed no preliminary motions. Scott filed five preliminary motions during the motion period:

1. under § 1.633(a) for judgment against Koyama for failing to satisfy the best mode requirement of U.S.C. § 112 (paper no. 22);
2. under § 1.633(a) for judgment against Koyama for failing to satisfy the enablement requirement of 35 U.S.C. § 112 (paper no. 26);
3. under § 1.633(b) for judgment on the grounds that there is no interference-in-fact (paper no. 23);
4. under § 1.633(f) to be accorded the benefit of GB No. 90 07029.3, filed March 29, 1990 (paper no. 25);
5. under § 1.633(c) to have Scott patent claims 1-12 designated as not corresponding to the Count

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priority and statement of the issues taken from the parties' briefs.

Motions

Scott

SM1 under 37 C.F.R. § 1.633(a) for judgment against Koyama on the ground that Koyama claim 7 corresponding to the Count is not patentable to Koyama because Koyama has failed to satisfy the best mode requirement of 35 USC § 112, first paragraph. (filed June 3, 1996; paper no. 22)

Statement of the Issues

Scott's and Koyama's statements of the issues are reproduced verbatim from their briefs.

Scott (SB 1)

- SI1 Is Scott et al entitled to a priority award by showing introduction of the invention into the United States before March 13, 1990 with diligence from just before that date up to constructive reduction to practice by the filing of the Scott et al U.K. application on March 29, 1990?
- SI2 Is Scott et al entitled to a priority award by showing introduction of the invention into the United States before March 13, 1990 with diligence from just before that date up to actual reduction to practice by the construction and operation of a plant using the process at issue in the U.S. by the end of December, [sic] 1992?
- SI3 Is the introduction of the Scott et al invention into the United States prior to March 13, 1990 in and of itself so complete as to constitute an actual reduction to practice entitling Scott et al to a priority award when the process was actually reduced to practice in the U.K. specifically for use in a plant to be built in the U.S., and the process as introduced into the U.S. was directly transposed into commercial use in that U.S. plant?
- SI4 Has Koyama et al satisfied the best mode requirement of 35 USC §112, first paragraph?

(paper no. 24).

In the Decision on Motions (paper no. 47), Scott preliminary motion 1 was deferred to final hearing, Scott preliminary motions 2, 3, and 5 were denied, and Scott preliminary motion 4 was granted. Scott (SB 5) states that it does not intend to pursue the issues raised by Scott preliminary motions 2, 3, and 5. Issues not raised in a party's brief are deemed abandoned. *Photis v. Lukenheimer*, 225 USPQ 948, 950 (Bd. Pat. Int. 1984). Accordingly, we only consider Scott motion 1.

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Koyama (KB 6-7)

- KI1 Does the failure of the Scott Record to include any evidence that the process of the Count was actually demonstrated or performed by Scott in the United States before the priority date of March 13, 1990 of Koyama prevent Scott from proving priority against Koyama based on an actual reduction to practice?
- KI2 Does the evidence of activity in the Scott Record directed only to commercially developing the process during the critical period of March 12-19, 1990 prevent Scott from proving priority against Koyama based on "diligence" towards an actual reduction to practice?
- KI3 Does the failure of the Scott Record to include any evidence of a best process mode concealed by the Koyama inventors prevent Scott from proving that the patent application of Koyama violates the best mode requirement of 35 U.S.C. §112?

We will address the priority issue first, followed by a discussion of the patentability issue.

PRIORITY

It is not the burden of the Board to scour the record, research any legal theory that comes to mind and serve generally as an advocate for a party. Compare Ernst Haas Studio, Inc. v. Palm Press, Inc., 164 F.3d 110, 112, 49 USPQ2d 1377, 1379 (2d Cir. 1999). Accordingly, in making our determination as to priority we have reviewed

only those specific facts and arguments of the parties relied upon in their briefs. See 37 C.F.R. § 1.656(b)(5) and(b)(6)⁹.

Senior party Koyama relies on their priority date of March 13, 1990 to prove a

⁹ 37 C.F.R. § 1.656(b)(5) requires:

[A] statement of the facts, in numbered paragraphs, relevant to the issues presented for decision with appropriate references to the record.

And 37 C.F.R. § 1.656(b)(6) requires:

[A]n argument, which may be preceded by a summary, which shall contain the contentions of the party with respect to the issues it is raising for consideration at final hearing, and the reasons therefor, with citations to

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constructive reduction to practice (Preliminary Statement, paper no. 21). Koyama does not present evidence to prove conception or actual reduction to practice.

Junior party has the burden of establishing priority by a preponderance of the evidence. 37 C.F.R. § 1.657(b). Bosies v. Benedict, 27 F.3d 539, 542, 30 USPQ2d 1862, 1864 (Fed. Cir. 1994). Accordingly, Scott, as the junior party, must establish that it actually reduced to practice the invention of the count before March 13, 1990, Koyama's priority date, or that it first conceived the invention prior to that date and proceeded with reasonable diligence from a time just prior to the opponent entering the field toward a reduction to practice, either actual or constructive. 35 U.S.C. § 102(g). Haskell v. Colebourne, 671 F.2d 1362, 1365, 213 USPQ 192, 194 (CCPA 1982).

Scott presents three lines of argument to meet its burden of establishing priority. Scott argues that it has demonstrated:

- a. prior conception with reasonable diligence from just before Koyama's entry into the field (i.e., March 13, 1990) up to constructive reduction to practice (SB 15-21);
- b. prior conception with reasonable diligence from just before Koyama's entry into the field (i.e., March 13, 1990) up to actual reduction to practice (SB 21-22); and,
- c. prior actual reduction to practice (SB 22-23).

Prior Conception With Reasonable Diligence Up To Constructive Reduction to Practice

In the first line of argument, Scott contends that they have demonstrated prior conception with reasonable diligence from just before Koyama's entry into the field (i.e.,

the cases, statutes, other authorities, and part of the record relied on.

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March 13, 1990) up to constructive reduction to practice.

Prior Conception: Scott alleges prior conception on the grounds that the invention was disclosed to others in the U.S. no later than October 1, 1989 (Preliminary Statement, paper no. 27). Koyama (KB 1) "concedes that Scott has established conception before the Koyama priority date". Accordingly, the fact that Scott has established conception prior to Koyama's priority date is not in dispute.

Constructive Reduction to Practice: Scott alleges a constructive reduction to practice on March 29, 1990. During the preliminary motion period, Scott moved under 37 C.F.R. § 1.633(f) to be accorded the benefit of G.B. application No. 90 07029.3, filed March 29, 1990. Koyama (paper no. 46) opposed the motion. That motion (paper no. 25) was granted (Decision on Motions, paper no. 47) and "Koyama no longer opposes the motion" (KB 6). Accordingly, the fact that Scott has established constructive reduction to practice on March 29, 1990, is not in dispute.

Diligence: The dispute centers on whether Scott has shown reasonable diligence from just prior to Koyama's entry into the field (i.e., March 13, 1990) until Scott's constructive reduction to practice (i.e., March 29, 1990). Accordingly, Scott must show reasonable diligence for no less than the period March 12-29, 1990.

To establish diligence, Scott must account for the entire 17-day critical period. Specific activities during the critical period must be demonstrated and they must be specific as to dates and facts. Nashef v. Pollock, 4 USPQ2d 1631, 1635 (Bd. Pat. App. & Int. 1987). The activities must have occurred in the United States. Wilson v. Sherts, 81 F.2d

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755, 760, 28 USPQ 379, 383-84 (CCPA 1936). Furthermore, the activities constituting diligence must be the result of efforts made on behalf of the inventor (Fearon v. Krasnow, 172 F.2d 233, 80 USPQ 435 (CCPA 1949)) and any testimony by Scott of such activities must be corroborated, Rieser v. Williams, 255 F.2d 419, 424, 118 USPQ 96, 101 (CCPA 1958). "It is well settled that, to satisfy the 'reasonable diligence' requirement of 35 U.S.C. § 102(g), the work relied on must ordinarily be directly related to reduction to practice of the invention of the counts in issue." Naber v. Cricchi, 567 F.2d 382, 384, 196 USPQ 294, 296 (CCPA 1977), cert. denied, 439 U.S. 826 (1978). However, activities directed solely to commercial exploitation of the invention not yet reduced to practice do not by themselves constitute diligence. Seeberger v. Dodge, 1905 Dec. Comm'r Pats. 603 (1905)¹⁰.

To show reasonable diligence, Scott relies on the following facts, which we reproduce from the brief (SB 9-12):

- (1) ICI announced in October, 1989 plans to build a plant in St. Gabriel, Louisiana to make 134a under the trade name "KLEA".
- (2) The announcement indicated ICI's intent to break ground at St. Gabriel in 1990 with the plant scheduled to go on-line in 1992.
- (3) Dr. Dattani, an employee of ICI Americas in Wilmington, Delaware, was a member of the combined ICI U.S./U.K. research group responsible for developing the process to be used in ICI's U.S. plant.
- (4) Dr. Dattani was involved in the "Hotel" project from essentially its beginning to the point where the U.S. plant was functioning commercially by the end of December 1992.
- (5) The process to be used in the Louisiana plant was reduced to practice in the U.K. as was finalized, or "frozen", by the end of February 1990.
- (6) The ICI Americas involvement in the "Hotel" project required frequent and extensive trips by Dattani and other ICI Americas employees to the U.K., and numerous conferences in both the U.S. and U.K. in the period 1989-1990 with extensive exchange of technical information.

¹⁰ "One having the first complete conception of an invention cannot hold the field against all comers by diligent efforts, merely, to organize and procure sufficient capital to engage in the manufacture of his device or mechanism for commercial purposes. This is a different thing from diligence in actual reduction to practice." Seeberger v. Dodge, 1905 Dec. Comm'r Pats. 603 (1905).

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- (7) The process used in the U.S. plant was finalized or "frozen" primarily on the basis of computer simulated tests carried out in England (SX 11).
- (8) Scheme 1 of SX 11 using the temperatures of SX 17 is the process which was finalized and adopted for use in the U.S. at least by the end of February, [sic]1990.
- (9) The process to be used in the St. Gabriel, Louisiana plant as described in Scheme 1 was known to Dattani and other ICI Americas employees in Wilmington, Delaware by at least the first week of February 1990.
- (10) The process of Scheme 1 of SX 11 was compared with the process as used in the U.S. plant by Dr. Robinson in 1993 and he found the process as used in the plant to be in accord with Scheme 1.
- (11) The process of Scheme 1 of SX 11 using the temperatures of SX 17 satisfies the language of the court.
- (12) In the period March 12-14, 1990, two ICI U.K. and four ICI Americas representatives visited six U.S. offices of prospective contractors in different parts of the U.S. for the purpose of selecting a contractor to build the St. Gabriel plant.
- (13) The individuals who visited the prospective contractors made their own individual assessments of the contractors and then met the following week to select a contractor.
- (14) The contractor was selected on or about March 23, 1990 but was not told of this until about March 28, 1990 as other issues needed to be considered with this contractor.
- (15) After the contractor (Badger) was selected, arrangements were immediately undertaken to meet with the contractor and take other actions needed to proceed with plant design and construction.
- (16) In addition to the contractor visits, there was other continuous activity in the U.S. in the period February-March, 1990, and thereafter, towards planning and building the St. Gabriel facility.
- (17) At least ten ICI Americas employees located in Wilmington and/or elsewhere in the U.S. were working full time in the period February-March, 1990, and thereafter, to complete the St. Gabriel facility and have it working by the end of 1992.
- (18) From the time of its appointment as contractor, Badger averaged about 30-35 people working on the plant project details to obtain sanction approval for the plant with up to 150 or more employees working on the plant after it was sanctioned.
- (19) There was pressure to file the Scott U.K. application because activity in the U.S. and the filing was done as soon as possible.
- (20) The project for building the St. Gabriel plant went from the laboratory process directly into the commercial plant without the intermediate use of a pilot plant or semi-works plant.
- (21) The St. Gabriel plant was completed and operating to produce 134a by the end of 1992, somewhat ahead of schedule.

In particular, the Scott exhibits, as listed in Appendix 3 of Scott's Brief, indicate that the following activities took place in the U.S. during the period March 12-29, 1990:

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- . contractor visits and summary comments on the visits;
- . cost quotes and memorandum on cost quotes regarding plant materials;
- . memorandum regarding environmental overview;
- . rejection letter to prospective contractor;
- . letter from prospective contractor and letters from contractor candidate providing further information;
- . estimates of equipment costs;
- . fax with information for consideration of candidate contractor;
- . estimates of design costs;
- . memorandum regarding plant equipment;
- . letter from candidate contractor Badger regarding workload;
- . process flow diagrams for the plant;
- . letter from contractor candidate regarding secrecy agreement;
- . letter regarding contractor selection;
- . memorandum from Dattani regarding events and design consideration for the plant;
- . memorandum and additions to memorandum summarizing discussions and outlining actions to be taken;
- . minutes of meeting with selected contractor Badger;
- . fax with comments on Badger; and,
- . letter from candidate contractor.

The facts show that, during the period March 12-29, 1990, Scott did not practice the subject matter of the count in the U.S. Instead, the facts show that all efforts in the U.S.

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were directed to securing a contractor to build a plant in the U.S. Not one activity was directed to the physical practice of the process. By March 29, 1990, no equipment or materials were purchased and no experiments were conducted. Rather, each and every activity during that period, manifested by oral or written communications, was a step in a plan for realizing the process on a commercial scale.

Scott (SB 19) agrees that "the activities in the U.S. were primarily concerned with construction of the U.S. plant in order to use the Scott process," but argues that "it is well established that work towards an actual reduction to practice can be relied on as diligence towards a constructive reduction to practice." In support thereof, Scott cites Rey-Bellet v. Englehardt, 493 F.2d 1380, 181 USPQ 453 (CCPA 1974).

We do not find, as Scott does, that the activities during the critical period represent work that went toward an actual reduction to practice. There is no question that the activities led to a plant in Louisiana by 1992, nearly two years after the written description of the process (SX11, SX17) was received in the U.S., and that the plant is where the process was reduced to practice. But the question is "whether particular work is sufficiently connected with the invention to be considered to be in the area of reducing it to practice," Bell Tel. Labs., Inc. v. Hughes Aircraft Co., 564 F.2d 654, 656, 195 USPQ 695, 697 (3d Cir. 1977), cert. denied, 435 U.S. 924 (1978). This is "determined in the light of the particular circumstances of the case which may be as varied as the mind of man can conceive. It is thus peculiarly a question of fact for the finder of the facts to determine in the light of those circumstances." Id., 564 F.2d at 656, 195 USPQ at 697. Considering the simplicity of the subject matter of the count, that to practice the invention does not require a

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plant (see e.g., the Scott declaration, paper no. 22, which duplicates the process in a lab experiment), that an experiment could have been conducted quickly and easily, that such an experiment was already conducted in the U.K. and therefore could have been repeated in the U.S., and that, notwithstanding the promptness¹¹ with which the process could have been conducted, the actual practice of the process did not take place for another two years is suggestive of a delay in reducing the invention to practice.¹² We conclude that the activities were not connected with reduction to practice of the process but rather were connected with the commercialization of the process. We can point to no activity that indicates an effort by Scott to reduce the invention to practice rather than or in addition to the efforts to commercialize it.

Accordingly, we find that the activities for the critical period March 12-29, 1990, were solely conducted for the purpose of commercializing the product of the process of the count. "However, commercial activity does not constitute reasonable diligence in achieving a reduction to practice." Antoshkiw v. Pevsner, 224 USPQ 1049, 1052 (Bd. Pat. Int. 1983) (citing Burns v. Curtis, 172 F.2d 588, 80 USPQ 587 (CCPA 1949)¹³).

¹¹ Compare with Honeywell, Inc. v. Diamond, 499 F. Supp. 924, 928-31, 208 USPQ 452, 460 (D.D.C. 1980): "a reduction to practice could have been achieved promptly at any time during the many years since 1963, because the required components, although not commercially satisfactory in all respects, were available."

¹² "[O]ne may not ordinarily delay the actual or constructive reduction to practice of some invention indefinitely, while an attempt is being made to commercialize the same," Egeol v. Midboe, 56 F.2d 867, 870, 13 USPQ 30, 34 (CCPA 1932).

¹³ "It is well settled that efforts to exploit an invention commercially do not constitute diligence in reducing it to practice. See Hurd v. Smith, 97 F.2d 147, 25 C.C.P.A., Patents, 1137; Preston et al. v. White, 97 F.2d 160, 25 C.C.P.A., Patents, 1219; and Petersen v. Thomas, 56 App.D.C., 113, 10 F.2d 908.

It is argued by counsel for appellant that the devices tested in laboratories were of such a nature as to be capable of actual use on an airplane. If such was the case, it would have been a relatively simple matter to arrange for a test under actual service conditions. In this connection it may be observed that another device, not here involved, designed by appellant to accomplish substantially the same purpose as

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Accordingly, we are not persuaded that the activities conducted during the critical period demonstrate reasonable diligence on the part of Scott to constructively reduce to practice the subject matter of the count.

Scott (SB 19) adds that the "Scott U.K. patent application was prepared and filed because of the U.S. activities and this was done as quickly as possible (S 5-6/6; 79/50)." In other words, in addition to the argument we addressed supra with regard to whether the activities associated with commercializing the process were directed to reducing the invention to practice, Scott also argues that there was attorney diligence.

On the issue of attorney diligence, the facts do not show that any effort was made in the U.S. to expedite the preparation and filing of the U.K. application. According to Scott, Alan Oldroyd, a European attorney employed by ICI in England declared (see Appendix 2 of Scott brief) that there was pressure from the U.S. to file the U.K application. But it would appear that Alan Oldroyd prepared and filed the application in the U.K. Scott does not show otherwise. Accordingly, the way we understand the argument, Scott is contending that the preparing/filing activities, that occurred in the U.K., should inure to the benefit of Scott in the U.S. because the activities (albeit commercializing activities), that caused the "pressure" to file, originated in the U.S. We are not persuaded by this argument. We see no reason to place any weight on a so-called "pressure" to file abroad, that happens to originate in the U.S., where no activities by the attorney in preparing and filing a foreign application has occurred in the U.S. Acts done abroad may not be considered in establishing diligence in reducing the invention to practice. Wilson v. Sherts, 81 F.2d at

the present invention, was tested under actual flight conditions not long prior to appellant's laboratory tests

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761, 28 USPQ at 385. Accordingly, we are left only with the "pressure" to file. That alone does not establish attorney diligence.

"The standards for finding reasonable diligence are harsh. The public policy favors early disclosure, Honeywell Inc. v. Diamond, Commissioner of Patents and Trademarks, 208 USPQ 452 (D.D.C. 1980); Young v. Dworkin, 489 F.2d 1277, 1279-81, 180 USPQ 388, 390-392 (C.C.P.A. 1974), and thus the law is reluctant to displace an inventor who was the first to disclose to the public his invention, Naber v. Cricchi, 567 F.2d 382, 385-86 & n.5, 196 USPQ 294, 296-298 & n.5 (C.C.P.A. 1977), cert. denied, 439 U.S. 829, 200 USPQ 64 (1978)." Liang v. Borger, 214 USPQ 368, 372-373 (Bd. Pat. Int. 1981). After careful review of the facts in this case, we conclude that only activities directly solely to the exploitation of the invention were conducted in the U.S. and, as such, are not directly related to reduction to practice of the subject matter of the count. Accordingly, we find that Scott has not met its burden of establishing reasonable diligence from a point just prior to Koyama's entry into the field (i.e., March 13, 1990) until Scott's constructive reduction to practice (i.e., March 29, 1990).

Prior Conception With Reasonable Diligence Up To Actual Reduction to Practice

In the second line of argument, Scott contends that they have demonstrated prior conception with reasonable diligence from just before Koyama's entry into the field (i.e., March 13, 1990) up to actual reduction to practice.

of the instant invention." Burns v. Curtis, 172 F.2d 588, 591, 80 USPQ 587, 589 (CCPA 1949).

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Conception: This is not at issue. We refer to our comments under this heading with respect to the prior line of argument.

Actual Reduction to Practice: Scott alleges that the invention was actually reduced to practice by the end of 1992 by completion of a plant in Louisiana by the end of 1992 (Preliminary Statement, paper no. 27). Koyama does not appear to challenge this particular allegation. Accordingly, we conclude that Scott has established an actual reduction to practice of the invention in the U.S. after Koyama's priority date.

Diligence: The only issue is whether Scott has shown reasonable diligence from the conception in the U.S. prior to March 13, 1990 to the actual reduction to practice occurring at the end of 1992 in Louisiana. Scott must account for the entire period. In discussing Scott's first line of argument, we addressed whether Scott has shown reasonable diligence for the 17 days between March 12, 1990 - one day prior to Koyama's entry into the field (i.e., March 13, 1990) - and March 29, 1990, Scott's constructive reduction to practice, and found that reasonable diligence was not shown. Accordingly, since, for the reasons given supra, Scott cannot account for the period from just before March 13, 1990 to March 29, 1990, Scott cannot account for the entire period from the conception in the U.S. prior to March 13, 1990 to the actual reduction to practice occurring at the end of 1992 in Louisiana.

Accordingly, we are not persuaded by the second line of argument and find that Scott has not met its burden of establishing prior conception with reasonable diligence up to actual reduction to practice.

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Prior Actual Reduction to Practice

In the third line of argument (represented by SI3¹⁴), Scott alleges an actual reduction to practice in the U.S. on a date prior to Koyama's March 13, 1990 priority date.

According to one authority on the law and practice of interference,¹⁵ the following conditions are essential to establish an actual reduction to practice:

- (a). The reduction, like conception, must have taken place in the United States.
- (b). The reduction to practice must have been made by the inventor himself, or by one authorized to do so either by the inventor or by one who acquired the inventor's rights to the invention.
- (c). The invention must have been embodied in a physical or tangible form.
- (d). The physical embodiment of the invention, which is relied upon as the reduction to practice, must show every essential feature of the invention as defined in the count of the interference.
- (e). The reduction to practice must demonstrate the practicability or utility of the invention.
- (f). The reduction to practice must have been appreciated by the inventor at the time it was made.
- (g). The fact that the reduction took place must be corroborated in point of time.

Elements (a) and (c) are implicated here.

Regarding element (a), Scott "recognizes that carrying out a process in a foreign country without performing the process in the U.S. will not generally suffice to show actual reduction to practice. Shurie v. Richmond, 699 F.2d 1156, 216 USPQ 1042 (Fed. Cir. 1983)." SB 23. The parties stipulated, pursuant to 37 CFR § 1.672(a), that the Scott process defined by the Count was reduced to practice in the U.K. prior to March 13, 1990

¹⁴ Scott's position is presented in their brief at SB20-23. Koyama (represented by KI1) responded to this line of argument at KB14-17.

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(paper no. 68) but, as Scott has recognized, this does not meet the conditions for an actual reduction to practice.

Accordingly, Scott relies on these additional facts showing activities in the U.S.:

- "[t]his process, introduced as such into the U.S., went directly into use in the [completed] St. Gabriel, Louisiana plant";
- "[t]he process was intentionally and expressly designed for use in the United States";
- Luther Smith testified that the project "involved going directly from the approved laboratory process into the full-scale commercial plant without the intermediate use of a pilot plant";
- "[t]he reduction to practice resulted from computer simulated tests which were readily transposed regardless of the geography involved"; and,
- "the process from the outset was intended for use in the U.S."

Also, a document comprising flowsheets describing the process of the Count (SX11, SX17; SB 10) had been received in the U.S. prior to Koyama's priority date of March 13, 1990.

Based on these facts, Scott argues that "the introduction [of the process] into the U.S. prior to March 13, 1990, of the complete process ready to go, should, in and of itself, represent an actual reduction to practice". We disagree.

The fact is, prior to March 13, 1990, individuals in the U.S. possessed nothing but a specification of the process reduced to practice in the U.K. and an intent to build a plant. No chemicals or laboratory equipment were shipped or acquired or used to practice the method of the count. Notwithstanding the evidence that Scott had every intention of constructing a plant in the U.S. for the purpose of conducting the process described on the flowsheets, the only thing that existed in the U.S. prior to March 13, 1990, which related to the process of the Count was a specification of the process. There is no question that

¹⁵ Rivise & Caesar, *Interference Law and Practice* § 132, Vol. 1, p. 396, The Michie Co. (1940)

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something related to the process of the count was in the U.S. prior to the priority date. The question is whether a specification alone can rise to the level of being an actual reduction to practice.

In that regard, another condition essential to establishing an actual reduction to practice is that "[t]he invention must have been embodied in a physical or tangible form." Element (c); Rivise & Caesar, Interference Law and Practice § 132, Vol. 1, p. 396, The Michie Co. (1940). There is an actual reduction to practice of the subject matter of the count when there is a physical embodiment of the invention in tangible form. See Ex parte Dunne, 20 USPQ2d 1479, 1480 (Bd. Pat. App. & Int. 1991). "Under our precedent there cannot be a reduction to practice of the invention ... without a physical embodiment which includes all limitations of the claim," UMC Elecs. Co. v. United States, 816 F.2d 647, 652, 2 USPQ2d 1465, 1468 (Fed. Cir. 1987), cert. denied, 484 U.S. 1025 (1988). A document describing a process is not, in our view, a "physical embodiment" of the process. Accordingly, we conclude that the specification that was received in the U.S., though describing the process of the count, is not an actual reduction to practice in the U.S. of the subject matter of the count.

We appreciate that Scott views the specification differently, even so far as to contend that the present situation contrasts from that of Shurie in that the "process at issue was introduced into the U.S. in such full and complete detail that the process went directly into plant operation" (SB 23). However, Shurie is very clear: "the invention of a process is completed, or reduced to practice, when it is successfully performed" (699 F.2d at 1045, 216 USPQ at 1045). On the facts of this case, the process was successfully performed in

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the U.K., not in the U.S., and we do not view a description of the process that was transmitted to and received in the U.S. as being a successful performance of the described process in the U.S.

Accordingly, we are not persuaded by this last line of argument and find that Scott has not met its burden of establishing an actual reduction to practice prior to Koyama's priority date.

We find, therefore, that junior party Scott has not proved prior invention by a preponderance of the evidence and therefore Koyama is the presumptive first inventor.

PATENTABILITY

In this section, we review the question of patentability raised by the Scott. As we have stated, Koyama is entitled to priority based on their constructive reduction to practice as of the March 13, 1990 filing date of their Japanese application. However, Scott has moved under 37 C.F.R. § 1.633(a) (paper no. 22) against Koyama on the ground that Koyama's claim 7 is not patentable to Koyama because it fails to comply with the best mode requirement of 35 U.S.C. § 112, first paragraph.¹⁶ Since we have disposed of the question of priority, supra, further consideration of this patentability issue in this interference proceeding requires us to direct our attention only to the claims and not to the count. In re Van Geuns, 788 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993). The question of patentability is therefore restricted to Koyama's claim 7.

We reproduce Koyama's claim 7:

7. In a method for producing 1,1,1,2-tetrafluoroethane in two reaction stages involving

¹⁶ Koyama opposed the motion (paper no. 35) to which Scott filed a reply (paper no. 43).

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(1) the reaction of trichloroethylene and hydrogen fluoride to produce 1,1,1-trifluorochloroethane and (2) the reaction of 1,1,1-trifluorochloroethane with hydrogen fluoride to produce 1,1,1,2-tetrafluoroethane:

carrying out the reaction (2) between 1,1,1-trifluorochloroethane and hydrogen fluoride at a temperature in the range of 300°C to 400°C,

carrying out the reaction (1) between trichloroethylene and hydrogen fluoride at a temperature in the range of 180°C to 300°C and

recycling unconverted 1,1,1-trifluoroethane with hydrogen fluoride for further reaction in the presence of trichloroethylene.

Scott, as movant, bears the burden of proof as to the relief requested. Kubota v. Shibuya, 999 F.2d 517, 520, 27 USPQ2d 1418, 1420 (Fed. Cir. 1993) and 37 C.F.R. § 1.637(a). The burden of proof on a preliminary motion is preponderance of the evidence. See Kubota, 999 F.2d at 519 n.2, 27 USPQ2d at 1420, n.2 and Schrag v. Strosser, 21 USPQ2d 1025, 1027 (Bd. Pat. App. & Int. 1991).

We, as a panel, have carefully reviewed the Scott motion and the arguments therein, and we find that Scott has not sustained its burden of proof to establish that the Koyama claim is in violation of the best mode requirement. 35 U.S.C. § 112, first paragraph.¹⁷

The first paragraph of 35 U.S.C. § 112 provides, in relevant part, that the specification "shall set forth the best mode contemplated by the inventor of carrying out his invention". 35 U.S.C. § 112.

¹⁷ 37 C.F.R. § 1.655 was amended to emphasize that a panel of the Board will resolve the merits of an interference as a panel without deference to any interlocutory order. The abuse of discretion standard applies only to interlocutory procedural orders. See Consideration of Interference Rulings at Final Hearing in Interference Proceedings. Fed.Reg. Vol 64, No. 50 (March 16, 1999) pp. 12900-12902.

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Best mode is a question of fact. Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 1535-1536, 3 USPQ2d 1737, 1745 (Fed. Cir.), cert. denied, 484 U.S. 954 (1987). The purpose of the best mode requirement is to ensure that the public, in exchange for the rights given the inventor under the patent laws, obtains from the inventor a full disclosure of the preferred embodiment of the invention which they conceived. Id. See also In re Gay, 309 F.2d 769, 135 USPQ 311 (CCPA 1962).

Determining whether a patent application complies with the best mode requirement involves two underlying factual inquiries. First, it must be determined whether, at the time the patent application was filed, the inventor had a best mode of practicing the claimed invention. Chemcast Corp. v. Arco Indus. Corp., 913 F.2d 923, 927, 16 USPQ2d 1033, 1036 (Fed. Cir. 1990). Thus, the first inquiry is subjective, Chemcast, 913 F.2d at 928, 16 USPQ2d at 1036, and focuses on the inventor's state of mind at the time they filed their application. Glaxo Inc. v. Novopharm Ltd., 52 F.3d 1043, 1049, 34 USPQ2d 1565, 1569 (Fed. Cir.), cert. denied, 516 U.S. 988 (1995). Second, if the inventor had a best mode of practicing the claimed invention, it must be determined whether the specification adequately disclosed what the inventor contemplated as the best mode so that those having ordinary skill in the art could practice it. Chemcast, 913 F.2d at 927-928, 16 USPQ2d at 1036-37. Thus, the second inquiry is objective and depends upon the scope of the claimed invention and the level of the skill in the art. Chemcast, 913 F.2d at 928-929, 16 USPQ2d at 1037.

Scott, in their motion, allege that the Koyama specification is defective in that it fails to identify a condition or feature which would yield a 99% conversion of trichloroethylene.

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Scott contends that the Koyama application discloses an experiment, Experiment 3, which is representative of the process defined by the count and that when declarant John D. Scott attempted to repeat Experiment 3, he obtained a trichloroethylene conversion of 19-21%, and in one instance a conversion of 60%, instead of the 99% referred to in the Koyama application. Based on the differing results, "Scott concludes that Koyama must have used some other condition or feature not disclosed by Koyama to obtain the results referred to in Example 3" (paper no. 22, p. 3). Scott speculates that "[t]his omission may be, for example, the use of pressure" (paper no. 22, p. 3). Scott points out that Koyama does not disclose the use of pressure and that it is Scott who found that superatmospheric pressure should be used. Scott also implies that a particular catalyst is necessary.

We have carefully reviewed the Scott motion and the accompanying declaration and find that Scott has not established that Koyama at the time of filing its application, had a preferred embodiment for carrying out its method. On this record, Scott has not established that Koyama knowingly withheld information regarding the best way to practice the claimed process. "It is concealment of the best mode of practicing the claimed invention that section 112, ¶ 1 is designed to prohibit," Randomex, Inc. v. Scopus Corp., 849 F.2d 585, 588, 7 USPQ2d 1050, 1053 (Fed. Cir. 1988). Absent evidence of accidental or actual concealment by applicant, a rejection for failure to provide the best mode cannot be sustained. In re Sherwood, 613 F.2d 809, 204 USPQ 537 (CCPA 1980), cert. denied, 450 U.S. 994 (1981). No such evidence has been provided.

We point out that Scott's motion had been deferred to final hearing. Scott argues that the Koyama specification is defective because it failed to disclose any pressure or

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catalyst used in the process to obtain a 99% conversion. To this argument, we respond that "The best mode inquiry is directed to what the applicant regards as the invention, which in turn is measured by the claims." Engel Indus., Inc. v. Lockformer Co., 946 F.2d 1528, 1531, 20 USPQ2d 1300, 1302 (Fed. Cir. 1991). Koyama's claim does not specify a pressure or catalyst and moreover does not specify a degree of conversion. The claim is directed to a method for producing 1,1,1,2-tetrafluoroethane in two reaction stages. It is not directed to a method of converting 99% of trichloroethylene to 1,1,1,2-tetrafluoroethane under a particular pressure and/or catalyst. Hence, we hold that Scott have not sustained their burden of proof. Moreover, the conditions necessary to obtain a 99% conversion is not relevant to the issue. Scott must show that Koyama had that as a preferred embodiment and concealed it. That Scott has not shown.

Accordingly, we find that, on this record, Scott has not sustained the burden, with respect to the motion.

JUDGMENT

For the foregoing reasons, judgment as to the subject matter of the count is entered in favor of senior party, Satoshi Koyama, Yukio Homoto and Naoki Esaka and judgment is awarded against junior party John D. Scott and Rachel A. Steven.

Having decided all the issues properly raised by the parties in their briefs, we now enter judgment in this interference pursuant to our authority under 37 C.F.R. § 1.658(a).

Accordingly: we hold the following:

Scott Motion 1 is denied.

John D. Scott and Rachel A. Steven, the junior party, are not entitled to their patent

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containing claims 1-12 corresponding to Count 1.

Satoshi Koyama, Yukio Homoto and Naoki Esaka, the senior party, are entitled to a patent containing claim 7 of their application corresponding to Count 1.

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Administrative Patent Judge)	
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