

NEW RULES FOR OLD PROBLEMS: DEFINING THE CONTOURS OF THE BEST MODE REQUIREMENT IN PATENT LAW

ROY E. HOFER*
L. ANN FITZGERALD**

TABLE OF CONTENTS

Introduction	2310
I. Fundamental Features of the Best Mode Requirement .	2312
A. The Best Mode Requirement Has Both an Objective and a Subjective Component	2312
B. The Commercial Embodiment Is Not Conclusive Evidence of the Best Mode	2313
II. Rules Distilled from an Analysis of Best Mode Cases ...	2314
A. Early Tests for Best Mode Compliance	2314
B. <i>Chemcast Corp. v. Arco Industries</i> : The Definitive Test for Best Mode Compliance	2316
C. The Level of Skill in the Art as a Limit on Disclosure	2317
D. The Scope of the Claims as a Limit on Disclosure .	2320
1. The first successful use of the best mode defense	2321
2. Claim scope vs. claim type	2322
3. The Federal Circuit's treatment of claim scope .	2323

* Roy E. Hofer is a partner and President of the Chicago intellectual property law firm of Willian Brinks Hofer Gilson & Lione. Mr. Hofer is a trial lawyer specializing in patent, trade secret, and related antitrust and contract matters. He is a past president of the Chicago Bar Association and recently completed his term as president of the Federal Circuit Bar Association. He has held a number of offices in the American Bar Association, the Illinois Institute for Continuing Legal Education, and the Intellectual Property Law Association of Chicago.

** L. Ann Fitzgerald is an associate with the intellectual property law firm of Willian Brinks Hofer Gilson & Lione in Chicago, Illinois. She earned her law degree *summa cum laude* from The John Marshall Law School, Chicago, Illinois and her bachelor's degree in engineering *cum laude* from Tulane University School of Engineering, New Orleans, Louisiana.

a. <i>DeGeorge v. Bernier</i>	2323
b. <i>Christianson v. Colt Industries Operating Corp.</i>	2324
c. <i>Spectra-Physics, Inc. v. Coherent, Inc.</i>	2325
d. <i>Randomex, Inc. v. Scopus, Inc.</i>	2327
e. <i>Chemcast Corp. v. Arco Industries</i>	2329
f. <i>Engel Industries v. Lockformer Co.</i>	2330
g. <i>Transco Products Inc. v. Performance Contracting, Inc.</i>	2331
E. Imputed Knowledge Is Rejected as a Standard for Measuring the Adequacy of Best Mode Disclosure	2333
F. Concealment of the Best Mode for a Claimed Element as Inequitable Conduct	2335
III. Best Mode Is Measured as of the Filing Date	2337
A. The Basic Rule	2337
B. The Debate over Applications Claiming Priority Pursuant to § 120	2338
C. Continuation Practice After <i>Transco</i>	2340
D. The Relevant Trade-Related Aspects of Intellectual Property Rights (TRIPs) Provision	2348
Conclusion	2348

INTRODUCTION

In patent law, one of the primary requirements for a patent application, disclosure of the "best mode" of practicing the invention,¹ is also a powerful defense to a charge of patent infringement.² Some of its power is derived from the fact that the contours of what must be disclosed to meet the best mode requirement are not always clear

1. The best mode requirement is one of three requirements set out in 35 U.S.C. § 112, ¶ 1 that must be met by the specification portion of the patent application. The other requirements are known as enablement and written description. The distinction between best mode and enablement is explored *infra*, Part II.A.

For readers unfamiliar with patent law, the meaning of the word "mode" may be rather opaque. The best mode of practicing an invention refers to the component parts or ingredients or parameters that an inventor considers to work particularly well in the invention. If the invention were a pencil with an eraser, examples of best mode elements could be the specific material used in the eraser, the type of wood used for the housing, or, perhaps, the details of the process used to produce a "lead" having certain characteristics. Whether the best mode would encompass each of these depends largely on the scope of the patent claim. For a discussion of the role of claim scope in evaluating the best mode disclosure required, see *infra* Part II.D.2.

2. Title 35 of the United States Code contains The Patent Act of 1952 (patent statute). The best mode requirement is codified at 35 U.S.C. § 112. Failure to comply with the provisions of § 112 is a basis for holding a patent invalid and is a defense to an infringement charge. See 35 U.S.C. § 282(3) (1988).

to patent applicants. It is clear, though, that the price of failing to perceive the contours of the requirement is steep: failure to meet the best mode requirement renders the patent claim invalid.³

The principal source of guidance on the contours of the best mode defense is the United States Court of Appeals for the Federal Circuit, which has exclusive jurisdiction over appeals of patent cases from the district courts.⁴ When the Federal Circuit was created in 1982,⁵ one of its primary purposes was to bring doctrinal stability to the field of patent law.⁶ The best mode requirement of 35 U.S.C. § 112 was an area of patent law that needed such stability.⁷

This Article analyzes case law on the best mode requirement, with particular emphasis on Federal Circuit decisions. In an attempt to define the contours of the best mode requirement, the authors offer their own Rules, which have been derived from recent decisions. Of particular interest is the extensive analysis of *Transco Products Inc. v. Performance Contracting, Inc.*⁸ and the analytical method suggested for determining the necessity of updating best mode disclosure in continuing applications.

3. *Id.*

4. This statement is somewhat of an oversimplification. The jurisdiction of the Federal Circuit is defined at 28 U.S.C. § 1295. With regard to patent appeals, the Federal Circuit has exclusive jurisdiction over cases for which subject matter jurisdiction in the district court was based in whole or in part on 28 U.S.C. § 1338. 28 U.S.C. § 1295(a)(1) (1988). For discussion of the full breadth of the Federal Circuit's jurisdiction, see WRIGHT, MILLER & COOPER, *FEDERAL PRACTICE AND PROCEDURE: JURISDICTION* 2D § 4104 (1988).

5. The Federal Circuit was created by the Federal Courts Improvement Act of 1982. That Act abolished the Court of Claims and the Court of Customs and Patent Appeals and transferred their jurisdiction to the new Court of Appeals for the Federal Circuit and the United States Claims Court. See WRIGHT, MILLER & COOPER, *FEDERAL PRACTICE AND PROCEDURE: JURISDICTION* 2D § 4104 (1988). The Federal Circuit adopted as binding precedent the decisions of its two predecessor courts. *South Corp. v. United States*, 690 F.2d 1368, 1369, 215 U.S.P.Q. (BNA) 657, 658 (Fed. Cir. 1982).

6. See S. REP. NO. 97-275, 97th Cong., 2d Sess. 2-7 (1982), reprinted in 1982 U.S.C.C.A.N. 11, 12-17. Prior to the creation of the Federal Circuit, patent appeals could be heard by any of the regional Circuit Courts of Appeal. The various courts rendered decisions inconsistent with one another. *Id.* (citing *Commission of Revision of the Federal Court Appellate System, Structure and Internal Procedures: Recommended for Change* 15, 144-57, reprinted at 67 F.R.D. 195, 214, 361-76 (1975)). Congress determined that the uniformity that would result from having a single court decide patent appeals would instill businesses with more confidence in the patent system. *Id.* This confidence was expected to yield more investment by businesses in research and development as well as production and distribution facilities. *Id.*

7. Splits in authority among the regional Circuit Courts of Appeal developed on several issues; most notably, on the issue of whether, to prevail on a best mode defense, a defendant had to prove that a patentee intentionally concealed the best mode. The Second, Third, Fourth, and Fifth Circuits answered this query in the affirmative, whereas the First and Sixth Circuits held that even accidental omission of the best mode was grounds for holding the patent claim invalid. For a discussion of case law from these circuits, see Roy E. Hofer, *The Best Mode Defense After the Federal Circuit's First Decade*, C785 ALI-ABA 1 (1992) (L. Ann Fitzgerald, contributing author).

8. 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed. Cir. 1994).

This Article is a continuation-in-part of an earlier article by the same authors entitled, *The Best Mode Defense After the Federal Circuit's First Decade*.⁹ Readers desiring more in-depth treatment of the history and purpose of the best mode requirement are referred to the previous article.

I. FUNDAMENTAL FEATURES OF THE BEST MODE REQUIREMENT

A. *The Best Mode Requirement Has Both an Objective and a Subjective Component*

Much of this Article will focus on the objective measures of best mode compliance. At the outset, it is important to recognize that the fundamental measure of what must be disclosed is the subjective scale of the inventor's opinion as to the best mode. This subjective standard is explicitly codified in § 112 which requires the inventor to "set forth the best mode *contemplated by the inventor* of carrying out his invention."¹⁰

Thus, where an inventor does not regard a particular mode as superior, there is no duty to disclose that mode.¹¹ Further, where an inventor does not know of a particular mode that happens to be superior, the failure to disclose that mode does not constitute a violation of the best mode requirement.¹²

The objective and subjective components of the best mode inquiry are reflected in the Federal Circuit's two-step test for evaluating best mode compliance. Later sections of this Article will discuss the two-step method in detail.¹³

9. Hofer, *supra* note 7.

10. 35 U.S.C. § 112 (1988) (emphasis added).

11. In *Union Carbide Corp. v. Dow Chemical Co.*, 213 U.S.P.Q. (BNA) 128 (S.D. Tex. 1981), *aff'd*, 682 F.2d 1136, 217 U.S.P.Q. (BNA) 1195 (5th Cir. 1982), "an active in-house controversy" existed as to which of two catalysts was superior. *Id.* at 138. The court held that failure to disclose one of the two catalysts did not amount to concealment of the best mode because, in light of the controversy over the two catalysts, the defendant could not establish that the undisclosed catalyst was the patentee's preferred embodiment. *Id.* at 138-39.

12. See *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1050, 34 U.S.P.Q.2d (BNA) 1565, 1569 (Fed. Cir. 1995); *Benger Lab., Ltd. v. R.K. Laros Co.*, 209 F. Supp. 639, 644, 135 U.S.P.Q. (BNA) 11, 15 (E.D. Pa. 1962), *aff'd*, 317 F.2d 455, 137 U.S.P.Q. (BNA) 693 (3d Cir. 1963), *cert. denied*, 375 U.S. 833 (1963). This rule applies even if the reason the inventor is not aware of the superior mode is because his company has removed him from the commercial development process and shielded him from the knowledge of a superior method of making the claimed compound. See *Glaxo*, 52 F.3d at 1051, 34 U.S.P.Q.2d (BNA) at 1570.

13. See *infra* Part II.B (discussing two-step test announced in *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 16 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1990)).

*B. The Commercial Embodiment Is Not Conclusive Evidence
of the Best Mode*

Defendants in infringement suits have often pointed to the fact that the patent does not disclose certain details about the commercial embodiment of the invention as a basis for alleging a best mode violation. It is true that the commercial embodiment may be evidence of the best mode. An analysis of case law, however, reveals at least two reasons why the commercial embodiment is not conclusive evidence of the best mode. First, the best mode contemplated by the inventor may not be appropriate for commercial application.¹⁴ For example, the scale of commercial production may dictate changes in the approach advocated by the inventor, who may not have produced any embodiments of the invention or may have only produced a prototype. So long as the patent discloses the best mode contemplated by the inventor at the time of filing, it is inconsequential whether other modes are adopted during the commercialization of the invention.¹⁵

Second, during the time between filing the patent application and bringing suit on the issued patent, additional experimentation or commercialization efforts may yield new preferred modes.¹⁶ As discussed in detail later in this Article, there is no duty to revise the best mode disclosure of the existing patent application to reflect later-adopted changes.¹⁷ Practitioners advise clients to take advantage of this by filing patent applications as early in the development cycle as possible, so that they can retain later-discovered improvements as trade secrets.¹⁸ The Federal Circuit has recently endorsed another

14. Every production method requires choosing certain steps and materials over others. For product claims, the best mode disclosure requirement does not necessarily apply to each of these choices. See *Wahl Instruments, Inc. v. Acvious, Inc.*, 950 F.2d 1575, 1581, 21 U.S.P.Q.2d (BNA) 1123, 1128 (Fed. Cir. 1991). Patent specifications were not meant to be production specification documents. *Id.* at 1581, 21 U.S.P.Q.2d at 1128; see also *In re Gay*, 309 F.2d 769, 774, 135 U.S.P.Q. (BNA) 311, 316 (C.C.P.A. 1962).

15. *Glaxo* confirms that it is the inventor's knowledge and opinion about the best mode, not that of others in the company, that is determinative. See *Glaxo*, 52 F.3d at 1050-51, 34 U.S.P.Q.2d (BNA) at 1569-70.

16. See *Gay*, 309 F.2d at 773, 135 U.S.P.Q. (BNA) at 315-16.

17. See *infra* Part III for a discussion of disclosure requirements in continuing applications; see also DONALD S. CHISUM, PATENTS § 7.05[2] n.1 (1991); *Transco*, 38 F.3d at 557-58, 32 U.S.P.Q.2d (BNA) at 1082-83.

18. See, e.g., Dale L. Carlson, *The Best Mode Disclosure Requirement in Patent Practice*, 60 J. PAT. OFF. SOC'Y 171, 179 (1978). Does this conflict with the purpose of the best mode requirement as expressed by Judge Rich: "the sole purpose of [the best mode] requirement is to restrain inventors from applying for patents while at the same time concealing from the public preferred embodiments of their inventions which they have in fact conceived"? See *Gay*, 309 F.2d at 772, 135 U.S.P.Q. (BNA) at 315.

means for avoiding the duty to disclose details of the commercial embodiment: isolate the inventor from the commercialization process.¹⁹ That decision confirms that the best mode is not synonymous with the best commercial embodiment.

II. RULES DISTILLED FROM AN ANALYSIS OF BEST MODE CASES

This section presents rules that the authors have derived from their analysis of significant decisions on best mode issues. It traces developments in the law from the U.S. Court of Customs and Patent Appeals (C.C.P.A.) through the Federal Circuit and is intended as a helpful synthesis for practitioners.

A. *Early Tests for Best Mode Compliance*

A seminal case in the development of an analytical method to determine compliance with the best mode requirement is *In re Gay*.²⁰ In *Gay*, the C.C.P.A. emphasized for the first time that best mode is a separate requirement from enablement.²¹ Writing for the court, Judge Rich announced the following test for best mode compliance: "an inventor is in compliance . . . if he does not conceal what he feels is a preferred embodiment of his invention."²² The court, limiting the amount of disclosure required by § 112, stated that "not every last detail is to be described, else patent specifications would turn into production specifications, which they were never intended to be."²³ The following three rules from *Gay* establish a foundation for future best mode decisions:

Rule 1: Best mode is a separate requirement from enablement.

Rule 2: An inventor complies with the best mode requirement by not concealing the preferred embodiment of the invention.

Rule 3: An inventor need not disclose every detail of the preferred embodiment to comply with the best mode requirement.

19. See *Glaxo*, 52 F.3d at 1051, 34 U.S.P.Q.2d (BNA) at 1570 (Mayer, J., dissenting).

20. 309 F.2d 769, 135 U.S.P.Q. (BNA) 311 (C.C.P.A. 1962).

21. *Gay*, 309 F.2d at 772, 135 U.S.P.Q. (BNA) at 315. Enablement is one of the requirements for the specification contained in the first paragraph of 35 U.S.C. § 112 (1994). One author has distilled the statutory and case law requirements for enablement into the following statement. The specification must "(1) when filed, (2) contain a written description of the invention, (3) sufficiently clear and complete to enable (4) one of ordinary skill in the art to which the invention pertains, to make and use the invention, (5) as claimed, (6) without undue experimentation." ROBERT L. HARMON, PATENTS AND THE FEDERAL CIRCUIT 140 (3d ed. 1994).

22. *Gay*, 309 F.2d at 772, 135 U.S.P.Q. (BNA) at 315.

23. *Id.* at 774, 135 U.S.P.Q. (BNA) at 316.

In 1979, the C.C.P.A. in *Weil v. Fritz*²⁴ introduced the concept of "adequacy of disclosure" into the best mode analysis.²⁵ The court stated that it was not for courts to prescribe *how* a best mode disclosure should be made; rather, their role was to evaluate whether the best mode was disclosed *adequately*.²⁶ The Federal Circuit would later incorporate this adequacy concept into its analytical approach.²⁷

One year later in *In re Sherwood*,²⁸ the C.C.P.A. returned to the concealment notion from *Gay*. The court stated that "only evidence of concealment [of the best mode] is to be considered."²⁹ The court did not, however, abandon the *Weil* adequacy standard.³⁰ Thus, *Sherwood* represents the merging of the *Gay* and *Weil* standards. Additionally, the court in *Sherwood* introduced another factor into the best mode analysis—the level of skill in the art as a gauge of the adequacy of a best mode disclosure.³¹

In *Sherwood*, the invention was a method of processing seismic data to produce cross-sectional plots showing the location and shape of subsurface petroleum deposits.³² The applicant,³³ *Sherwood*, did not disclose the computer programs used to produce the plots, but instead disclosed the mathematical equations used in the computer programs.³⁴ The C.C.P.A. concluded that because a programmer of ordinary skill could readily write a program to implement the disclosed equations, the applicant had not concealed his best mode.³⁵ Thus, the C.C.P.A. held that the applicant's claims were patentable and reversed the Patent Office's rejection of *Sherwood*'s claims.³⁶ Thus, *Sherwood* stands for the following rule:

24. 601 F.2d 551, 202 U.S.P.Q. (BNA) 447 (C.C.P.A. 1979).

25. *Weil v. Fritz*, 601 F.2d 551, 555, 202 U.S.P.Q. (BNA) 447, 450 (C.C.P.A. 1979) (evaluating quality of best mode disclosure).

26. *Id.*, 202 U.S.P.Q. (BNA) at 450.

27. See *infra* Part I.B (discussing how Federal Circuit's decision in *Chemcast Corp. v. Arco Industries* incorporated concept of adequacy of disclosure into best mode analysis).

28. 613 F.2d 809, 204 U.S.P.Q. (BNA) 537 (C.C.P.A. 1980).

29. *In re Sherwood*, 613 F.2d 809, 816, 204 U.S.P.Q. (BNA) 537, 544 (C.C.P.A. 1980).

30. *Id.*, 204 U.S.P.Q. (BNA) at 544. The court stated that the "quality of an applicant's best mode disclosure [could be] so poor as to effectively result in concealment." *Id.* (emphasis in original).

31. *Id.* at 817, 204 U.S.P.Q. (BNA) at 544.

32. *Id.* at 811, 204 U.S.P.Q. (BNA) at 539.

33. As used herein, the term "applicant" refers to a person who has applied for a patent, and "patentee" refers to a person to whom a patent has been granted. See BLACK'S LAW DICTIONARY 779 (6th ed. 1991).

34. *Sherwood*, 613 F.2d at 817, 204 U.S.P.Q. (BNA) at 544.

35. *Id.*, 204 U.S.P.Q. (BNA) at 544.

36. *Id.* at 810, 204 U.S.P.Q. (BNA) at 546. Patent applications are reviewed by examiners in the Patent and Trademark Office (PTO). See 35 U.S.C. § 131 (1988). If the examiner rejects one or more claims, the applicant may try to overcome the rejection. See 37 C.F.R. §§ 1.104, 1.106, 1.111 (1995). Upon a final rejection, the applicant may appeal to the Board of Patent

Rule 4: If one of ordinary skill in the art could practice the best mode from the patent disclosure, the best mode requirement has been satisfied.

With this backdrop of C.C.P.A. decisions in mind, the analytical method set out by the Federal Circuit can now be discussed. Subsequent sections of this Article will explore nuances in the application of that analytical method.

B. Chemcast Corp. v. Arco Industries: *The Definitive Test for Best Mode Compliance*

In *Chemcast Corp. v. Arco Industries*,³⁷ the Federal Circuit established a two-step analytical test to evaluate best mode compliance.³⁸ In the first step, the trier of fact must determine whether best mode disclosure was necessary, by considering whether the inventor had a preferred mode when filing the application.³⁹ If the trier of fact determines that disclosure was necessary, the second step requires the trier of fact to evaluate the adequacy of the disclosure by comparing the inventor's knowledge with the information disclosed.⁴⁰ The factors guiding the adequacy inquiry are the level of skill in the art⁴¹ and the scope of the claims.⁴² *Chemcast* yields the following rule:

Appeals and Interferences. Prior to the creation of the Federal Circuit, an applicant could appeal an adverse Board decision to the C.C.P.A. or initiate a civil action in federal district court. See 35 U.S.C. §§ 141, 145 (1954). Under current law, an applicant may appeal a Board decision to the Federal Circuit or initiate a civil action in federal district court. 35 U.S.C. §§ 141, 145 (1988).

37. 913 F.2d 923, 16 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1990).

38. *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 927-28, 16 U.S.P.Q.2d (BNA) 1033, 1036 (Fed. Cir. 1990).

39. *Id.* at 928, 16 U.S.P.Q.2d (BNA) at 1036. The mode preferred by the inventor is his or her "best mode." It is possible that the inventor does not have a preferred mode for some or all of the components of the invention.

40. *Id.*, 16 U.S.P.Q.2d (BNA) at 1036.

41. *Id.*, 16 U.S.P.Q.2d (BNA) at 1036. The court stated that "the level of skill in the art is a relevant and necessary consideration in assessing the adequacy of a best mode disclosure." *Id.* at 927, 16 U.S.P.Q.2d (BNA) at 1036.

42. In *re Hayes Microcomputer Prods., Inc. Patent Litig.*, 982 F.2d 1527, 25 U.S.P.Q.2d (BNA) 1241 (Fed. Cir. 1992), reaffirms the viability of the *Chemcast* test as a two-part test. *Id.* at 1536, 25 U.S.P.Q.2d (BNA) at 1245. *Hayes* illustrated that a patentee can avoid a finding of invalidity based on best mode by prevailing on the first prong of the *Chemcast* test. *Id.* at 1537, 25 U.S.P.Q.2d (BNA) at 1245-46. Conversely, *Hayes* illustrated that a defendant relying on a defense of best mode invalidity cannot regard the first prong as a mere formality or "warm-up" to the "real" battle over concealment.

In *Hayes*, the Federal Circuit found substantial evidence to support the jury's determination that the inventor had not contemplated a specific firmware (software embedded in the memory) program as the best mode for his invention. *Id.* at 1536-37, 25 U.S.P.Q.2d (BNA) at 1248.

The inventor believed that the use of firmware was the best mode, but did not regard any specific firmware as superior. *Id.* at 1537, 25 U.S.P.Q.2d (BNA) at 1248. If the inventor does not have a preferred mode at the time of filing, no disclosure obligation arises and there is no need to advance to the second prong of the *Chemcast* test. See *id.* at 1536-37, 25 U.S.P.Q.2d (BNA) at 1248-49. The first prong of the *Chemcast* test determines whether disclosure of a best

Rule 5: The two-step analytical method to test for best mode compliance is:

- (a) Did the inventor have a preferred mode when filing the application, and, if so,
- (b) Was the preferred mode adequately disclosed in view of (1) the scope of the claims, and (2) the level of skill in the art?

Consistent with *Sherwood*, the court in *Chemcast* did not focus on the presence or absence of an intent to conceal. Rather, under the *Chemcast* test, the best mode requirement is violated by a failure to adequately disclose the best mode, regardless of whether the failure was accidental or intentional.⁴³ Thus, the following rule can confidently be stated:

Rule 6: For purposes of a validity determination, it is irrelevant whether the non-disclosure of the best mode was accidental or intentional.⁴⁴

C. The Level of Skill in the Art as a Limit on Disclosure

The enablement requirement of § 112 provides that the knowledge of a person "skilled in the art" is the relevant measure of the adequacy of the disclosure.⁴⁵ Although the best mode requirement does not contain this language,⁴⁶ courts have used the level of skill in the art in assessing the adequacy of the best mode disclosure.⁴⁷ The level of skill in the art is one of the objective limits on best mode disclosure recognized in *Chemcast* and it is reflected in Rule 4 as derived from *Sherwood*.⁴⁸

Rule 4 was applied unchanged by the Federal Circuit until 1988.⁴⁹

mode is *necessary*, if it is, the second prong determines whether the disclosure provided is *adequate*. But see *Shearing v. Iolab Corp.*, 975 F.2d 1541, 1546 (Fed. Cir. 1992) (answering first prong of *Chemcast* inquiry negatively and still advancing to second prong and concluding that best mode disclosure was adequate even if it was not necessary).

43. See *supra* Part I.A (discussing *Sherwood*).

44. Intentional concealment is relevant to the question of inequitable conduct. See *Consolidated Aluminum Corp. v. Foseco*, 910 F.2d 804, 15 U.S.P.Q.2d (BNA) 1481 (Fed. Cir. 1990), discussed *infra* Part II.F.

45. 35 U.S.C. § 112 (1988).

46. See *id.*

47. See *In re Sherwood*, 613 F.2d 809, 204 U.S.P.Q. (BNA) 537 (C.C.P.A. 1980), *cert. denied*, 450 U.S. 994 (1981); see also *Wahl Instruments, Inc. v. Acvious*, 950 F.2d 1575, 21 U.S.P.Q.2d (BNA) 1123 (Fed. Cir. 1991); *Engel Indus. v. Lockformer Co.*, 946 F.2d 1528, 20 U.S.P.Q.2d (BNA) 1300 (Fed. Cir. 1991).

48. 913 F.2d at 928, 16 U.S.P.Q.2d (BNA) at 1036; see *supra* Part II.B (discussing two-step test for best mode compliance).

49. The Federal Circuit first addressed the use of the level of skill in the art in best mode analysis in *W.L. Gore & Associates v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. (BNA) 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984), and stated that "[the patentee's] disclosure must be examined for § 112 compliance in light of knowledge extant in the art on his application filing date." *Id.* at 1557, 220 U.S.P.Q. (BNA) at 316. Thus, Rule 4 was unchanged by *Gore*.

In that year, the Federal Circuit announced a broad holding in *Dana Corp. v. IPC Ltd.*⁵⁰ that, on its face, contradicted C.C.P.A. and Federal Circuit precedent regarding the role of the level of skill in the art. The patent at issue in *Dana* covered rubber valve stem seals.⁵¹ The inventor allegedly violated the best mode requirement by failing to disclose the necessity of treating the exposed surfaces of the seals with fluoride to achieve satisfactory sealing performance.⁵² The inventor's knowledge of the necessity of this step was proven by a company test report signed by the inventor stating that non-treated rubber did not give acceptable results.⁵³

The inventor argued that disclosure of the fluoride treatment was unnecessary because fluoride treatment of rubber seals was commonly known in the art at the time of filing the patent application.⁵⁴ The inventor introduced expert testimony and a technical article from *Rubber Age* magazine in support of his position.⁵⁵ The district court accepted the inventor's argument and held that the best mode requirement could be met by looking to disclosures in the prior art.⁵⁶ Essentially, this meant that an inventor could meet the best mode disclosure requirement without making *any* disclosure, so long as the preferred mode could be shown to exist somewhere in the prior art. The Federal Circuit could not accept this result, and it reversed the district court's ruling.⁵⁷ In doing so, though, the court used the following overbroad language:

*Rule 7: "The best mode requirement is not satisfied by reference to the level of skill in the art."*⁵⁸

On the facts of *Dana*, Rule 7 does not conflict with Rule 4. Rule 4 requires the court to assess what the best mode disclosure means to

50. 860 F.2d 415, 8 U.S.P.Q.2d (BNA) 1692 (Fed. Cir. 1988), *cert. denied*, 490 U.S. 1067 (1989).

51. *Dana Corp. v. IPC Ltd.*, 860 F.2d 415, 416-17, 8 U.S.P.Q.2d (BNA) 1692, 1693-94 (Fed. Cir. 1988), *cert. denied*, 490 U.S. 1067 (1989).

52. *Id.*, 8 U.S.P.Q.2d (BNA) at 1694.

53. *Id.* at 418, 8 U.S.P.Q.2d (BNA) at 1695.

54. *Id.* at 418-19, 8 U.S.P.Q.2d (BNA) at 1695.

55. *Id.* at 419, 8 U.S.P.Q.2d (BNA) at 1695.

56. *Id.*, 8 U.S.P.Q.2d (BNA) at 1695-96. This evidence tended to show that skilled artisans in the field were familiar with fluoride treatment of rubber seals. *Id.*, 8 U.S.P.Q.2d (BNA) at 1695-96. "Prior art" refers to what exists in the state of knowledge or the state of the art at the time a patent application is filed or at the time of invention. Prior art may include patents, printed publications, or inventions that were known or used within the United States. See 35 U.S.C. § 102(a) (1988).

57. *Dana Corp.*, 860 F.2d at 420, 8 U.S.P.Q.2d (BNA) at 1696 (stating that trial court's denial of JNOV motion on best mode grounds was based on incorrect interpretation of law).

58. *Id.* at 419, 8 U.S.P.Q.2d (BNA) at 1696 (emphasis added).

one of ordinary skill in the art.⁵⁹ On the other hand, where the best mode is concealed rather than disclosed, as in *Dana*, Rule 4 does not apply. Moreover, on the facts of *Dana*, Rule 7 yields a fair result; one should not be allowed to circumvent disclosure requirements by asserting that the information the public needs to practice the invention's best mode is somewhere in the prior art. The Federal Circuit's language, however, was unnecessarily broad and, as discussed below, was not fully ameliorated by the court's further statement that the best mode requirement could not be met *solely* by reference to the level of skill in the art.⁶⁰

The significant impact of the broad language in *Dana* is demonstrated by the district court's actions in *Wahl Instruments, Inc. v. Acvious, Inc.*⁶¹ Prior to the Federal Circuit's decision in *Dana*, the defendant in *Wahl* moved for summary judgment on the ground that the plaintiff failed to meet the best mode requirement because the patent did not disclose the manufacturing techniques used by the plaintiff.⁶² The district court denied the defendant's motion for summary judgment on this ground.⁶³ After the *Dana* decision, however, the defendant in *Wahl* renewed its motion and, this time, the court granted summary judgment because the omitted information was well-known in the art, and, therefore, did not need to be disclosed in the patent application.⁶⁴

The Federal Circuit reversed, stating that the district court had read *Dana* too broadly.⁶⁵ *Dana* is not to be read literally. Instead, one should heed the narrower rule of *Dana*—a complete lack of disclosure cannot be cured by later claiming that the concealed processes were known in the art.⁶⁶ Thus, the rule to be derived from *Wahl* is the following:

Rule 4 (modified): An inventor need not disclose *how* to perform processes that are well-known in the art; however, an inventor must

59. See *supra* text accompanying notes 24-36, 45-57 (explaining background and cases that yield Rules 4 and 7).

60. *Dana Corp.*, 860 F.2d at 419, 8 U.S.P.Q.2d (BNA) at 1696.

61. 12 U.S.P.Q.2d (BNA) 1143 (D.N.J. 1989), *rev'd*, 950 F.2d 1575, 21 U.S.P.Q.2d (BNA) 1123 (Fed. Cir. 1991).

62. *Wahl Instruments, Inc. v. Acvious, Inc.*, 12 U.S.P.Q.2d (BNA) 1143, 1143 (D.N.J. 1989), *rev'd*, 950 F.2d 1575, 21 U.S.P.Q.2d (BNA) 1123 (Fed. Cir. 1991).

63. *Id.*

64. *Id.* at 1145.

65. *Wahl*, 950 F.2d at 1580, 21 U.S.P.Q.2d (BNA) at 1127 (noting that district court misinterpreted *Dana Corp.*).

66. See *id.*, 21 U.S.P.Q.2d (BNA) at 1127-28 (explaining that in *Dana*, inventor failed to name well-known technique that was necessary to invention, whereas in *Wahl*, the well-known technique of embedment molding was not necessary to invention, but rather was selected solely for cost/volume reasons).

disclose that it is *necessary* to perform those processes to practice the best mode of the invention.

The district court in *McNeil-PPC v. Procter & Gamble*⁶⁷ read *Dana* much more narrowly than did the district court in *Wahl*. The factual situation in *McNeil* was similar to that of *Dana*: both cases involved nondisclosure of a step that was well-known in the art and necessary to practicing the best mode of the invention.⁶⁸ In *McNeil*, the district court held that nondisclosure was not enough to prove a best mode violation.⁶⁹ The court stated, "[I]t may be that the best mode is so obvious and so well understood by those skilled in the art that no disclosure is needed at all."⁷⁰

While the *McNeil* rationale could be true in some instances, the district court did not carefully apply the Federal Circuit's two-step test from *Chemcast* in reaching this rule. *Chemcast* states that the first step is to determine the necessity of a best mode disclosure.⁷¹ The only relevant factor is the inventor's knowledge and whether the inventor contemplated a best mode.⁷² If so, *Chemcast* then looks to the level of skill in the art as a factor in determining the *adequacy* of the disclosure.⁷³ The *McNeil* court, however, confused the steps and looked to the level of skill in the art to determine the *necessity* of a best mode disclosure.⁷⁴

The *Chemcast* test is a simple, disciplined method of analysis for best mode compliance that has the potential to stabilize the law. Whether it will achieve that result, however, will depend on whether district courts will conscientiously apply the *Chemcast* test. The Federal Circuit would ease the district courts' task by expressly limiting *Dana* and harmonizing it with *Chemcast* in the manner discussed above.

D. *The Scope of the Claims as a Limit on Disclosure*

The boundaries on the amount of disclosure necessary to meet the best mode requirement have never been firmly set. One of the most controversial questions about the amount of disclosure required is

67. 767 F. Supp. 1081, 19 U.S.P.Q.2d (BNA) 1663 (D. Colo. 1991).

68. *McNeil-PPC v. Procter & Gamble*, 767 F. Supp. 1081, 1083, 19 U.S.P.Q.2d (BNA) 1663, 1665 (D. Colo. 1991).

69. *Id.* at 1084, 19 U.S.P.Q.2d (BNA) at 1665.

70. *Id.*, 19 U.S.P.Q.2d (BNA) at 1665.

71. *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 928, 16 U.S.P.Q.2d (BNA) 1033, 1037 (Fed. Cir. 1990).

72. *Id.*, 16 U.S.P.Q.2d (BNA) at 1037; *see also In re Hayes Microcomputer Prods., Inc. Patent Litig.*, 982 F.2d 1527, 1537, 25 U.S.P.Q.2d (BNA) 1241, 1248 (Fed. Cir. 1992) (finding no best mode violation because inventor did not prefer any specific firmware).

73. *Chemcast*, 913 F.2d at 928, 16 U.S.P.Q.2d (BNA) at 1037.

74. *See McNeil*, 767 F. Supp. at 1084, 19 U.S.P.Q.2d (BNA) at 1665.

whether the best mode as to unclaimed subject matter must be disclosed.⁷⁵ The cases discussed below address this question.

1. *The first successful use of the best mode defense*

The first modern case to invalidate a patent claim for failure to comply with the best mode requirement was *Flick-Reedy v. Hydro-Line Manufacturing*.⁷⁶ The invention in *Flick-Reedy* was a cylinder seal used to prevent leakage between the cylinder tube and head.⁷⁷ The shape of the mating surfaces was critical to achieving a sealing relationship.⁷⁸ The specification disclosed that a "special tool" was used to form one of the mating surfaces, yet this tool was not claimed or further described in the patent.⁷⁹

The Seventh Circuit affirmed the district court's holding that the patent failed to disclose the best mode.⁸⁰ While the circuit court did not explicitly consider the claim scope, it made clear that regardless of whether the special tool was claimed, it was necessary for achieving the claimed sealing relationship.⁸¹ The special tool was necessary for "carrying out" the invention and thus § 112 mandated its disclosure.⁸²

Moreover, the patentee in *Flick-Reedy* admitted that it deliberately withheld the information in order to keep the special tool a trade secret and thereby stifle competition.⁸³ This admission showed that the special tool was crucial to carrying out the best mode. Although it is not necessary to find intent to conceal the best mode,⁸⁴ the

75. The claims of a patent define the scope of protection. The claims do not, however, typically contain an exhaustive list of the elements of the machine or product. Elements may be disclosed in the specification but not claimed in the claims. For example, a power source may be required to operate a machine, but it would not necessarily be claimed. This is an example of unclaimed subject matter.

76. 351 F.2d 546, 146 U.S.P.Q. (BNA) 694 (7th Cir. 1965), *cert. denied*, 383 U.S. 958, 148 U.S.P.Q. (BNA) 771 (1966).

77. *Flick-Reedy v. Hydro-Line Mfg.*, 351 F.2d 546, 550, 146 U.S.P.Q. (BNA) 546, 697 (7th Cir. 1965), *cert. denied*, 383 U.S. 958, 148 U.S.P.Q. (BNA) 771 (1966).

78. *Id.* at 550, 146 U.S.P.Q. (BNA) at 697.

79. *Id.*, 146 U.S.P.Q. (BNA) at 697.

80. *Id.* at 551, 146 U.S.P.Q. (BNA) at 697.

81. *Id.* at 550, 146 U.S.P.Q. (BNA) at 697.

82. *See id.*, 146 U.S.P.Q. (BNA) at 697 ("Flick, the president of plaintiff [company] and inventor of the seal, testified that the 'special tool' was an 'aid' in achieving the required concentricity . . .").

83. *See id.* at 550, 146 U.S.P.Q. (BNA) at 697 (reporting that patentee admitted that "there are times when you could apply for a patent . . . but the enforcement thereof . . . would be most difficult, and you may elect to try to keep the information of a secret nature").

84. *See In re Sherwood*, 613 F.2d 809, 816, 204 U.S.P.Q. (BNA) 537, 544 (C.C.P.A. 1980) (noting that evidence of either accidental or intentional concealment is to be considered in judging adequacy of best mode disclosure).

presence of intent made the court's decision easier. The rule from *Flick-Reedy* may be stated as follows:

Rule 8: Any item mentioned in the patent application that is necessary to achieve the benefit of the claimed invention is subject to the best mode disclosure requirement, regardless of whether that item is claimed.

2. *Claim scope vs. claim type*

Several cases have suggested that what must be disclosed to meet the best mode requirement for a product claim⁸⁵ is different from what must be disclosed to meet the best mode requirement for a process claim.⁸⁶ While probably a sound distinction, the apparent dichotomy is perhaps better understood in terms of claim *scope* rather than claim *type*.⁸⁷

*International Telephone & Telegraph Corp. (ITT) v. Raychem Corp.*⁸⁸ illustrates this point. The product in this case was insulation for high performance wire for use on aircraft.⁸⁹ The patentee failed to disclose the addition of two copolymers to an insulation layer and the addition of a proprietary compound in another layer.⁹⁰ These additional materials, however, were used only to aid in the manufacturing and did not change the qualities of the finished product.⁹¹ The court noted that the patent "covers a *product*, [insulated] . . . wire; it

85. Section 100 of the Patent Act lists these categories of patentable subject matter: processes, machines, article of manufacture, and compositions of matter. See 35 U.S.C. § 100 (1988). As used herein, the term "product claim" encompasses articles of manufacture, e.g., a stapler, a printer, or a laser discharge tube.

86. A "process claim" is a claim drawn to a process or method for doing something or achieving some result. See *Mendenhall v. Astec Indus.*, 14 U.S.P.Q.2d (BNA) 1134, 1140 (E.D. Tenn. 1988) (finding that because process patent claimed weighing and dispensing method, not computer and computer program used in actual weighing and dispensing, failure to disclose details of hardware and software used did not amount to violation of best mode requirement), *aff'd*, 891 F.2d 299 (Fed. Cir. 1989) (table); *Indecor, Inc. v. Fox-Wells & Co.*, 642 F. Supp. 1473, 1490, 1 U.S.P.Q.2d (BNA) 1847, 1859 (S.D.N.Y. 1986) (finding that because patent claimed fabric and not details of knitting process or knitting machine used to make fabric, patentee's failure to disclose "every last detail of the knitting process" did not amount to violation of best mode requirement). Processes are another category of patentable subject matter. See 35 U.S.C. § 100 (1988). Process claims recite a number of steps for performing a process. Process claims are also called method claims.

87. For example, in *Spectra-Physics, Inc. v. Coherent, Inc.*, the patentees' failure to disclose the best way of attaching copper cups to the wall of an ion laser tube resulted in both the product and process claims being held invalid. 827 F.2d 1524, 1537-38, 3 U.S.P.Q.2d (BNA) 1737, 1746 (Fed. Cir.), *cert. denied*, 484 U.S. 954 (1987). The omitted information was clearly within the scope of both types of claims. The product claim recited, "means for attaching the . . . cup rims along the inside wall of said tubes," *id.* at 1527 n.2, and the process claim recited, "permanently securing the heat-conducting members [the copper cups] to the . . . tube." *Id.* at 1528 n.4.

88. 538 F.2d 453, 191 U.S.P.Q. (BNA) 1 (1st Cir. 1976), *cert. denied*, 429 U.S. 886 (1976).

89. *International Tel. & Tel. Corp. v. Raychem Corp.*, 538 F.2d 453, 454-55, 191 U.S.P.Q. (BNA) 1, 2 (1st Cir. 1976), *cert. denied*, 429 U.S. 886 (1976).

90. *Id.* at 459-60, 191 U.S.P.Q. (BNA) at 6.

91. *Id.* at 460, 191 U.S.P.Q. (BNA) at 6.

does not make any claim to the *process* of manufacturing that product."⁹²

On appeal, the circuit court adopted the district court's finding that the undisclosed copolymers "were not part of the claim in the . . . patent."⁹³ Thus, it was the scope of the claims, rather than the characterization of the claims as product or process claims, that was determinative. The distinction between product and process was simply one way of recognizing limits on the claim scope.

The court also observed that the undisclosed materials were not essential to the manufacturing process.⁹⁴ It is noteworthy that if the materials were essential to the making of the invention, the court should have held the patent invalid for lack of enablement. The court distinguished the facts in *ITT* from those in *Flick-Reedy* on the grounds that in *ITT*, the undisclosed compound was not critical to the successful manufacture of the claimed product, whereas in *Flick-Reedy*, the undisclosed special tool was essential to produce the sealing relation claimed in the patent.⁹⁵ The rule to be taken from these cases is set out below:

Rule 9: It is not necessary to disclose unclaimed compounds used in the process of manufacturing a claimed product, where (a) the compounds are not essential to the production of the claimed product, and (b) the compounds do not change the characteristics of the finished product.

3. *The Federal Circuit's treatment of claim scope*

a. *DeGeorge v. Bernier*

In *DeGeorge v. Bernier*,⁹⁶ the Federal Circuit reversed the Board of Patent Appeals and Interferences, which had held a patent invalid for failure to disclose the best mode, because the Board erred in interpreting the scope of the claim.⁹⁷ The invention was an electrical circuit to be used with a word processor or typewriter to achieve a certain type of automatic indentation.⁹⁸ Properly construed, the

92. *Id.*, 191 U.S.P.Q. (BNA) at 7 (emphasis added).

93. *Id.*, 191 U.S.P.Q. (BNA) at 7.

94. *Id.*, 191 U.S.P.Q. (BNA) at 7 (noting that addition of Compound X to Kynar was not crucial to manufacturing process, but merely made production of insulated wire more profitable by allowing Kynar to be extruded over wire at faster rate).

95. *Id.*, 191 U.S.P.Q. (BNA) at 7.

96. 768 F.2d 1318, 226 U.S.P.Q. (BNA) 758 (Fed. Cir. 1985).

97. *DeGeorge v. Bernier*, 768 F.2d 1318, 1320, 226 U.S.P.Q. (BNA) 758, 759 (Fed. Cir. 1985). This case actually arose from an interference, so it was not a patent claim but rather an interference count that was being construed. *Id.* For purposes of the best mode issue, this distinction is inconsequential, so, to avoid distraction, this Article refers to it as a claim.

98. *Id.*, 226 U.S.P.Q. (BNA) at 759.

claim did not include a word processor; therefore, the inventors' failure to disclose details about their preferred word processor did not violate the best mode requirement.⁹⁹ This analysis is facially appealing, however, it stops after determining claim scope. In contrast, *Flick-Reedy* and *ITT* went on to determine whether the unclaimed item was necessary to practice the best mode of the invention,¹⁰⁰ an approach that seems more consistent with the purpose of the best mode requirement. *DeGeorge* yields the following simple rule:

Rule 10: To determine compliance with best mode, one must first construe the claim. If the insufficiently described item is not within the scope of the claim, there was no duty to disclose it and thus, no best mode violation for its nondisclosure.

b. Christianson v. Colt Industries Operating Corp.

In *Christianson v. Colt Industries Operating Corp.*,¹⁰¹ the patents at issue were for rifle parts that Colt used in manufacturing the M-16 rifle.¹⁰² In order for the parts of any one M-16 to be interchangeable with the parts of any other M-16, the parts had to be made within narrow tolerances of the manufacturing specifications established for each dimension of the parts.¹⁰³ Colt retained these manufacturing specifications and tolerances as trade secrets.¹⁰⁴

Christianson essentially argued that using the parts in an M-16 was the best mode for the invention and, therefore, the specifications and tolerances had to be disclosed.¹⁰⁵ The court rejected that argument, holding that Colt was not obligated to disclose the specifications and tolerances because neither interchangeability nor use in an M-16 rifle was claimed or even mentioned in the patents.¹⁰⁶ This holding is consistent with Rule 10 from *DeGeorge*.¹⁰⁷

99. *Id.* at 1325, 226 U.S.P.Q. (BNA) at 763.

100. See *supra* text accompanying notes 76-95 (explaining *Flick-Reedy* and *ITT* cases).

101. 822 F.2d 1544, 3 U.S.P.Q.2d (BNA) 1241 (Fed. Cir. 1987), *vacated as without jurisdiction*, 486 U.S. 800, 7 U.S.P.Q.2d (BNA) 1109 (1988), *on remand*, 870 F.2d 1292, 10 U.S.P.Q.2d (BNA) 1352 (7th Cir. 1989) (adopting reasoning and holding of 1987 Federal Circuit decision), *cert. denied*, 493 U.S. 822 (1989).

102. *Christianson v. Colt Indus. Operating Corp.*, 822 F.2d 1544, 1547-48, 3 U.S.P.Q.2d 1241, 1242-43 (Fed. Cir. 1987), *vacated as without jurisdiction*, 486 U.S. 800, 801, 807-13 (1988), *on remand*, 870 F.2d 1292, 10 U.S.P.Q.2d (BNA) 1352 (7th Cir. 1989), *cert. denied*, 493 U.S. 822 (1989).

103. *Id.* at 1563, 10 U.S.P.Q.2d (BNA) at 1255.

104. *Id.*, 10 U.S.P.Q.2d (BNA) at 1255.

105. *Id.*, 10 U.S.P.Q.2d (BNA) at 1360.

106. *Id.*, 10 U.S.P.Q.2d (BNA) at 1360.

107. See *supra* text accompanying notes 96-100 (yielding Rule 10 which states that if insufficiently described item is not within scope of claim, no best mode violation arises for its nondisclosure).

To the extent that this case is viewed merely as an application of Rule 3 derived from *Gay*¹⁰⁸—that patents are not intended to be production specifications—it was correctly decided. The following rule can be derived from *Christianson*:

Rule 11: The best mode requirement does not require an inventor to disclose how to *use* the claimed product in the “best” way.¹⁰⁹

c. *Spectra-Physics, Inc. v. Coherent, Inc.*

In *Spectra-Physics, Inc. v. Coherent, Inc.*,¹¹⁰ the Federal Circuit again addressed claim scope as a limit on best mode disclosure. One of the two patents in suit¹¹¹ was directed to an ion laser with an improved laser discharge tube and the other was directed to a method of making an ion laser.¹¹² Both patents stressed the importance of the bond between the copper cups and the laser discharge tube wall.¹¹³ The patents disclosed pulse soldering, moly-manganese brazing, and TiCuSil brazing as methods for attaching the cups.¹¹⁴ The patents did not disclose, however, the six-stage TiCuSil brazing cycle developed by the inventor, a cycle that differed significantly from prior art TiCuSil brazing techniques.¹¹⁵ The district court held that because the patents did not disclose the six-stage brazing cycle, the patents were invalid for lack of enablement.¹¹⁶

While affirming the judgment of invalidity, the Federal Circuit held that the failure to disclose the brazing cycle was a violation of the best mode requirement, not the enablement requirement.¹¹⁷ The Federal Circuit explained that “nonenablement is the failure to disclose *any* mode.”¹¹⁸ Further elaborating on the distinction between

108. See *supra* text accompanying notes 20-23 (yielding Rule 3 which states that inventor need not disclose every detail of preferred embodiment to comply with best mode requirement).

109. This principle was reiterated in *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1575, 24 U.S.P.Q.2d (BNA) 1401, 1415 (Fed. Cir. 1992). In *Brooktree* the court reaffirmed that the best mode requirement is not concerned with the various applications in which an invention can be used. *Id.*, 24 U.S.P.Q.2d (BNA) at 1415. Thus, Rule 11, derived from *Christianson*, remains viable.

110. 827 F.2d 1524, 3 U.S.P.Q.2d (BNA) 1737 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 954 (1987).

111. The term “patent in suit” refers to the patent that the defendant is alleged to have infringed, or, in a declaratory judgment action, the patent that is alleged to be invalid or unenforceable.

112. *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524, 1526-27, 3 U.S.P.Q.2d (BNA) 1737, 1738-39 (Fed. Cir. 1987).

113. *Id.* at 1529, 3 U.S.P.Q.2d (BNA) at 1740.

114. *Id.* at 1529-30, 3 U.S.P.Q.2d (BNA) at 1740.

115. *Id.* at 1531, 3 U.S.P.Q.2d (BNA) at 1741.

116. *Id.*, 3 U.S.P.Q.2d (BNA) at 1741.

117. *Id.* at 1532, 3 U.S.P.Q.2d (BNA) at 1742.

118. *Id.* at 1534, 3 U.S.P.Q.2d (BNA) at 1744 (citing *In re Glass*, 492 F.2d 1228, 1233, 181 U.S.P.Q. (BNA) 31, 35 (C.C.P.A. 1974)).

the best mode and enablement requirements, the Federal Circuit stated:

Enablement looks to placing the subject matter of the claims generally in the possession of the public. If, however, the applicant develops specific instrumentalities or techniques which are recognized at the time of filing as the best way of carrying out the invention, then the best mode requirement imposes an obligation to disclose that information to the public as well.¹¹⁹

The following distinction can be made between the two requirements: enablement requires disclosure that would allow a person of ordinary skill in the art to make and use *any* embodiment of the invention, whereas best mode requires disclosure that would allow a person of ordinary skill in the art to make and use¹²⁰ the *best* embodiment contemplated by the inventor.¹²¹ While the enablement and best mode requirements¹²² have been blurred by the explicit adoption of the level of skill in the art—an enablement concept—as an element of best mode analysis, patent applicants—and litigants—should recognize that the two requirements are distinct.

In *Spectra-Physics*, the Federal Circuit found that the disclosure was enabling because two of the three disclosed methods of attaching the cups to the tube could be practiced successfully by persons skilled in the art.¹²³ The disclosure did not meet the best mode requirement, however, because it failed to give any details to allow a person of ordinary skill in the art to practice the third method, which was the inventor's preferred mode, a six-stage TiCuSi brazing cycle.¹²⁴ The patentee argued that disclosing details of the brazing cycle would turn the patent specification into a production specification, which it was

119. *Id.* at 1532, 3 U.S.P.Q.2d (BNA) at 1742.

120. Whether the "best mode for carrying out" an invention means the best mode of making and using an invention remains an open question. For a discussion of this question, see Hofer, *supra* note 7; see also *Wahl Instruments, Inc. v. Acvious, Inc.*, 950 F.2d 1575, 1579, 21 U.S.P.Q.2d (BNA) 1123, 1126 (Fed. Cir. 1991) (concluding that statutory phrase "carrying out his invention" cannot be defined with precision).

121. See *Spectra-Physics*, 827 F.2d at 1532-34, 3 U.S.P.Q.2d (BNA) at 1744 (explaining difference between enablement and best mode requirements).

122. See *Bigham v. Godtfredsen*, 857 F.2d 1415, 1418, 8 U.S.P.Q.2d (BNA) 1266, 1269 (Fed. Cir. 1988) (noting distinction among enablement, written description, and best mode requirements); *Spectra-Physics*, 827 F.2d at 1534-35, 3 U.S.P.Q.2d (BNA) at 1744 (noting that best mode question is separate and distinct from question of whether specification enabled one to make invention at all); *In re Brebner*, 455 F.2d 1402, 1404, 173 U.S.P.Q. 169, 171 (1972) (noting that enablement and best mode are two distinct inquiries and inquiries into best mode should only pertain to contemplated mode of carrying out invention); *In re Gay*, 309 F.2d 769, 772, 135 U.S.P.Q. (BNA) 311, 315 (1962) (explaining that enablement requires disclosure that will permit those skilled in art, without undue experimentation, to make and practice invention while best mode requires disclosure of best mode contemplated by inventor when invention is carried out).

123. *Spectra-Physics*, 827 F.2d at 1533, 3 U.S.P.Q.2d (BNA) at 1743-44.

124. *Id.* at 1537, 3 U.S.P.Q.2d (BNA) at 1745.

not meant to be.¹²⁵ Although the court acknowledged this fact, the argument could not excuse the complete absence of details about the brazing cycle.¹²⁶ The court reiterated that the quality of disclosure may be so poor as to effectively conceal the best mode.¹²⁷

Spectra-Physics thus modifies the rule derived from *Flick-Reedy*:

Rule 8 (modified) (for process claims): If an inventor considers a specific technique to be the best way for performing a claimed step in the process, that technique must be disclosed.

Rule 8 (modified) (for product claims): If an inventor considers a specific technique to be the best way of making an invention, and use of that technique improves the quality or performance of the product, the technique must be disclosed.¹²⁸

d. *Randomex, Inc. v. Scopus, Inc.*

In *Randomex, Inc. v. Scopus, Inc.*,¹²⁹ decided in 1988, the Federal Circuit once again considered the role of claim scope as a limit on the amount of disclosure required. In *Randomex*, the patent claimed a portable apparatus for cleaning computer disk packs.¹³⁰ In order to use the apparatus, a cleaning fluid was required, but cleaning fluid was not a claimed element of the invention.¹³¹ The district court found that the best mode requirement was violated by the inventor's failure to disclose the cleaning fluid in the patent.¹³² The patent gave only a generic description of two types of cleaning fluid.¹³³ As an example of one of those types, the patent listed a brand-name

125. *Id.* at 1536, 3 U.S.P.Q.2d (BNA) at 1745. The patentee relied on the portion of *In re Gay*, 309 F.2d 769, 769, 135 U.S.P.Q. (BNA) 311, 316 (C.C.P.A. 1962), that has been labeled Rule 3. See *supra* text accompanying notes 20-23 (extrapolating Rule 3 from holding in *Gay*).

126. *Spectra-Physics*, 827 F.2d at 1537, 3 U.S.P.Q.2d (BNA) at 1745.

127. *Id.* at 1536, 3 U.S.P.Q.2d (BNA) at 1745 (citing *In re Sherwood*, 613 F.2d 809, 816, 204 U.S.P.Q. (BNA) 537, 544 (C.C.P.A. 1980)).

128. The scope of this rule is consistent with the rule from *International Tel. & Tel. Corp. v. Raychem Corp.*, 538 F.2d 453, 460, 191 U.S.P.Q. (BNA) 1, 7 (1st Cir. 1976), discussed *supra* Part I.D.2, that unclaimed compounds that are useful but not necessary to manufacturing a claimed product, and that do not change the characteristics of the claimed product, need not be disclosed; see also *Dana Corp. v. IPC Ltd.*, 860 F.2d 415, 418-19, 8 U.S.P.Q.2d (BNA) 1692, 1696 (Fed. Cir. 1988) (requiring disclosure of step necessary to achieve satisfactory product performance).

129. 849 F.2d 585, 7 U.S.P.Q.2d (BNA) 1050 (Fed. Cir. 1988).

130. *Randomex, Inc. v. Scopus, Inc.*, 849 F.2d 585, 586, 7 U.S.P.Q.2d (BNA) 1050, 1051 (Fed. Cir. 1988).

131. *Id.*, 7 U.S.P.Q.2d (BNA) at 1051. The claims in a patent constitute the formal definition of the invention. *Autogiro Co. v. United States*, 384 F.2d 391, 395-96, 155 U.S.P.Q. (BNA) 697, 701 (Ct. Cl. 1967). The sub-parts of claims are called limitations or elements. See *Perkin-Elmer Corp. v. Westinghouse Elec. Corp.*, 822 F.2d 1528, 1533 n.9, 3 U.S.P.Q.2d (BNA) 1321, 1325 n.9 (Fed. Cir. 1987). However, "element" has at least two meanings. *Id.*, 3 U.S.P.Q.2d (BNA) at 1325 n.9. It may be synonymous with "limitation" or it may refer to a component, i.e., a discrete physical part of the invention. *Id.*, 3 U.S.P.Q.2d (BNA) at 1325 n.9.

132. *Id.* at 588, 7 U.S.P.Q.2d (BNA) at 1053.

133. *Id.* at 586, 7 U.S.P.Q.2d (BNA) at 1051.

cleaner marketed by Randomex.¹³⁴ The other type of cleaning fluid could cause an explosion if used with the apparatus.¹³⁵ Thus, the "worst mode" was disclosed alongside the best mode, with no indication of which cleaning fluid was preferred.¹³⁶

The Federal Circuit found no best mode violation because the quality of the disclosure was not so poor as to conceal effectively the best mode.¹³⁷ The court held that because the patent did not add or attempt to add to the cleaning fluid art, there was no duty to disclose the cleaning fluid formula.¹³⁸ The court illustrated its reasoning with an example: If one invented an internal combustion engine, one would be required to disclose the fuel on which it ran the best, but would not be required to provide the formula for the fuel.¹³⁹

The court in *Randomex* was perhaps influenced by Rule 11, derived from *Christianson*, which states that details concerning the best mode of using an invention need not be disclosed.¹⁴⁰ Alternatively, *Randomex* suggests that as to unclaimed elements, there is a lower level of disclosure required. The rule can be stated as such:

Rule 12: For unclaimed elements necessary to use an invention, the inventor must disclose their existence and provide a general description, but need not provide detailed information.

In *Randomex*, the inventor admitted that his failure to disclose the formula for Randomex cleaning fluid was intentional and that he hoped to thereby increase sales of the cleaning fluid.¹⁴¹ The court found no best mode violation, however, because the inventor did not conceal what was required to be disclosed.¹⁴²

The other new rules derived from *Randomex* are:

Rule 13: Disclosure of the preferred mode alongside a non-preferred (and even dangerous) mode is sufficient to meet the best mode requirement.

Rule 14: Identifying a product by its trade name and providing a generic description of the product is sufficient to meet the best mode requirement. There is no need to disclose the product's

134. *Id.*, 7 U.S.P.Q.2d (BNA) at 1051.

135. *Id.* at 589, 7 U.S.P.Q.2d (BNA) at 1054.

136. *Id.*, 7 U.S.P.Q.2d (BNA) at 1053-54.

137. *Id.*, 7 U.S.P.Q.2d (BNA) at 1054.

138. *Id.* at 590, 7 U.S.P.Q.2d (BNA) at 1054.

139. *Id.*, 7 U.S.P.Q.2d (BNA) at 1054.

140. See *supra* text accompanying notes 101-09 (explaining Rule 11 derived from *Christianson*).

141. *Randomex*, 849 F.2d at 590, 7 U.S.P.Q.2d (BNA) at 1054.

142. *Id.*, 7 U.S.P.Q.2d (BNA) at 1054.

formula, so long as substitutes for the trade name product are commercially available.

e. Chemcast Corp. v. Arco Industries

The next significant best mode decision from the Federal Circuit was issued in *Chemcast Corp. v. Arco Industries*.¹⁴³ The invention at issue was an elastomeric grommet, a plug button used to seal openings in various materials, with a base portion and a locking portion made from materials with significantly different hardnesses.¹⁴⁴ The inventor disclosed that the locking portion could be made of castable resinous material, polyurethane, or polyvinyl chloride (PVC) having a hardness of more than 70 Shore A.¹⁴⁵ The inventor, however, had only tried one type of material for the locking portion, a PVC plastisol composition having a hardness of 75 ± 5 Shore D.¹⁴⁶ The material was manufactured specifically for him by Reynsol Corporation, which called the composition R-4467.¹⁴⁷

The Federal Circuit held that the inventor violated the best mode requirement by not explicitly or implicitly disclosing the hardness of the material actually used for the locking portion.¹⁴⁸ Further, the inventor failed to disclose the supplier and trade name of the material used.¹⁴⁹ The court considered the omitted information to be within the scope of the claims because the omitted information described the preferred embodiment of a claimed element.¹⁵⁰

The inventor argued that he did not have to disclose the preferred material because the patent did not claim a specific material for the locking portion of the grommet.¹⁵¹ The Federal Circuit ultimately rejected this argument, reasoning that because the patent claimed a material having certain properties, the inventor was required to

143. 913 F.2d 923, 16 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1990).

144. *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 924, 16 U.S.P.Q.2d (BNA) 1033, 1034 (Fed. Cir. 1990).

145. *Id.* at 929, 16 U.S.P.Q.2d (BNA) at 1038.

146. *Id.*, 16 U.S.P.Q.2d (BNA) at 1038.

147. *Id.*, 16 U.S.P.Q.2d (BNA) at 1038.

148. *Id.*, 16 U.S.P.Q.2d (BNA) at 1038. Implicit disclosure is disclosure from which one of ordinary skill in the art could discern the needed information. *Id.*, 16 U.S.P.Q.2d (BNA) at 1038.

149. *Id.*, 16 U.S.P.Q.2d (BNA) at 1038. In this case, adequate best mode disclosure required identifying the trade name and supplier because (1) the product was developed specifically for Chemcast and equivalent products were not commercially available; (2) the inventor did not know the product's formula and therefore could not disclose it; and (3) certain characteristics of the grommet material were claimed elements of the invention. *Id.*, 16 U.S.P.Q.2d (BNA) at 1038.

150. *Id.* at 928, 16 U.S.P.Q.2d (BNA) at 1037.

151. *Id.*, 16 U.S.P.Q.2d (BNA) at 1037.

detail the properties of the material that he considered to be best.¹⁵²

In addition to the two-step analytical method set forth in this Article as Rule 5,¹⁵³ *Chemcast* provides two other rules:

Rule 15: Where the inventor has a preferred embodiment for a claimed element, that embodiment must be disclosed.

Rule 16: Information necessary to practice the best mode of the claimed invention must be disclosed, even if the inventor considers the information to be "manufacturing data," "customer requirements," or even "trade secrets."¹⁵⁴

A recent Federal Circuit decision illustrates these rules. In *Graco Inc. v. Binks Manufacturing Co.*,¹⁵⁵ two inventors conceived of an improved industrial pump and hired a patent attorney to prepare a patent application.¹⁵⁶ By the time a draft of the application was prepared, the inventors had determined that the O-ring used in their prototype was not sufficiently durable.¹⁵⁷ One of the inventors conceived of an improved seal and asked the patent attorney to prepare a second application on a pump with the improved seal.¹⁵⁸ The Federal Circuit stated that the fact that one of the inventors was entitled to patent the improvement did not relieve him and the other inventor from disclosing the improvement as the best mode of the sealing mechanism claimed in the first patent.¹⁵⁹

f. Engel Industries v. Lockformer Co.

The Federal Circuit again addressed the issue of claim scope as a limit to the amount of disclosure required in *Engel Industries v. Lockformer Co.*¹⁶⁰ The Federal Circuit stated bluntly that "[u]nclaimed subject matter is not subject to the disclosure requirements of § 112; the reasons are pragmatic: the disclosure would be boundless, and the pitfalls endless."¹⁶¹ This statement is essentially

152. *Id.* at 928-29, 16 U.S.P.Q.2d (BNA) at 1037. The details required were the hardness of the material, the supplier, and the trade name. *Id.* at 929, 16 U.S.P.Q.2d (BNA) at 1038.

153. See *supra* Part I.B (analyzing *Chemcast* test for best mode compliance).

154. *Chemcast*, 913 F.2d at 930.

155. 60 F.3d 785, 35 U.S.P.Q.2d (BNA) 1255 (Fed. Cir. 1995).

156. *Graco Inc. v. Binks Mfg. Co.*, 60 F.3d 785, 787, 35 U.S.P.Q.2d (BNA) 1255, 1256 (Fed. Cir. 1995).

157. *Id.*, 35 U.S.P.Q.2d (BNA) at 1256.

158. *Id.*, 35 U.S.P.Q.2d (BNA) at 1256.

159. *Id.* at 789, 35 U.S.P.Q.2d (BNA) at 1258. The Federal Circuit remanded the case for reconsideration of the best mode issue. *Id.*, 35 U.S.P.Q.2d (BNA) at 1258.

160. 946 F.2d 1528, 20 U.S.P.Q.2d (BNA) 1300 (Fed. Cir. 1991).

161. *Engel Indus. v. Lockformer Co.*, 946 F.2d 1528, 1531, 20 U.S.P.Q.2d (BNA) 1300, 1302 (Fed. Cir. 1991).

the same as Rule 10 from *DeGeorge*, but allows the rule to be stated more emphatically:

Rule 10 (modified): Unclaimed subject matter is not subject to the best mode disclosure requirement.

It is not clear, however, how Rule 10 (modified) will interact with Rule 16 derived from *Chemcast*, which requires disclosure of everything necessary to practice the best mode of the invention.¹⁶² The *Engel* rule certainly seems to require less disclosure than Rule 16; however, the effect of *Engel* is hard to predict. First, the statement is actually dicta, because the court's holding was based on the fact that the undisclosed step was not part of the claimed invention but rather, was adopted to facilitate transportation and handling of the product.¹⁶³ Second, *Chemcast* remains as precedent because only en banc Federal Circuit decisions can overrule prior Federal Circuit holdings.¹⁶⁴

Although the *Engel* statement is dicta, it is important dicta because it signals that the Federal Circuit has recognized the perils of an expansive interpretation of the best mode requirement and is ready to set limits on the best mode defense.

g. *Transco Products Inc. v. Performance Contracting, Inc.*

In 1994, the Federal Circuit had occasion to revisit the trade name/supplier issue from *Chemcast*, *Wahl*, and *Randomex* in *Transco Products Inc. v. Performance Contracting, Inc.*¹⁶⁵ In *Transco*, the patent claims included the element of glass cloth that was "rewettable, high temperature resistant, [and] asbestos free."¹⁶⁶ The patent specification described the glass cloth as *having* "a leachable, organic silicate

162. See *supra* note 154 and accompanying text (setting forth Rule 16 as derived from *Chemcast*).

163. *Engel Indus.*, 946 F.2d at 1533, 20 U.S.P.Q.2d (BNA) at 1304.

164. *South Corp. v. United States*, 690 F.2d 1368, 1370 n.2, 215 U.S.P.Q. (BNA) 657, 658 n.2 (holding that decisions announced before September 30, 1992, by U.S. Court of Claims and U.S. Court of Customs and Patent Appeals are binding precedent in Federal Circuit).

165. 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed. Cir. 1994), *rev'd in part, vacating in part, and remanding* 821 F. Supp. 537, 28 U.S.P.Q.2d (BNA) 1739 (N.D. Ill. 1993). *Transco* did not break new ground on the issue, but did raise (without resolving) an interesting question: must the inventor bear the burden of establishing that, from the information given in the specification, one skilled in the art could have replicated or procured the material needed to practice the best mode? Because the court raised this issue, litigants are sure to test it in the future. The court noted that such a burden would be reasonable in some situations, but should not be applied across the board, lest patent applications become production specifications. *Id.* at 562, 32 U.S.P.Q.2d (BNA) at 1086. In response to the question posed by the court, consider that the commercial availability of the best mode materials was a factor in the court's decisions in *Wahl Instruments, Inc. v. Acvious, Inc.*, 950 F.2d 1575, 1582, 1583 n.4, 21 U.S.P.Q.2d (BNA) 1123, 1129, 1130 n.4 (Fed. Cir. 1991); *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 930, 16 U.S.P.Q.2d (BNA) 1033, 1038 (Fed. Cir. 1990); and *Randomex, Inc. v. Scopis, Inc.*, 849 F.2d 585, 589-90, 7 U.S.P.Q.2d (BNA) 1050, 1054 (Fed. Cir. 1988).

166. *Transco*, 38 F.3d at 554, 32 U.S.P.Q.2d (BNA) at 1079.

carried in a fatty and mineral oil vehicle [and meeting] U.S. Navy specification Mil-I-24244 . . . [and also meeting] Coast Guard specification CFL-164.009."¹⁶⁷ The district court granted summary judgment on the basis of invalidity, finding the above description to be inadequate because it failed to disclose the trade name or supplier of the glass cloth used by the inventor and thus, effectively concealed the identity of the cloth from the public.¹⁶⁸ The Federal Circuit vacated the judgment because the adequacy of the best mode disclosure was a factual issue on which conflicting testimony had been introduced, thus precluding summary judgment.¹⁶⁹

The district court in *Transco* interpreted *Chemcast* as requiring the disclosure of the trade name and supplier in addition to a description of the material's generic properties.¹⁷⁰ The Federal Circuit stressed that there is no per se rule requiring the disclosure of the trade name and supplier.¹⁷¹ This ruling is consistent with *Randomex*, where the court implied that disclosure of a trade name was not necessary if a generic description of the product was provided and products meeting that description were commercially available.¹⁷² The supplier and trade name were necessary in *Chemcast* only because the inventor lacked sufficient knowledge about the composition of the product to provide an adequate generic description and the product was only available from one supplier.¹⁷³

Drawing from *Transco*, *Wahl*, *Chemcast*, and *Randomex*, Rule 14 is modified as follows:

Rule 14 (modified): Where the inventor provides a generic description of a material and those skilled in the art would be able to determine sources from which the material would be commercially available, the trade name and supplier need not be disclosed. If the trade name and supplier are disclosed in addition to the generic description, the disclosure will be adequate to meet the best mode requirement. The formula of a commercially-available material need not necessarily be disclosed.

167. *Id.* at 559, 32 U.S.P.Q.2d (BNA) at 1083.

168. *Transco Prods. Inc. v. Performance Contracting, Inc.*, 821 F. Supp. 537, 544-46, 28 U.S.P.Q.2d (BNA) 1739, 1743-45 (N.D. Ill. 1993), *rev'd in part, vacated in part, and remanded*, 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed. Cir. 1994).

169. *Transco*, 38 F.3d at 559, 32 U.S.P.Q.2d (BNA) at 1085.

170. *Transco*, 821 F. Supp. at 545, 28 U.S.P.Q.2d (BNA) at 1745.

171. *Transco*, 38 F.3d at 561, 32 U.S.P.Q.2d (BNA) at 1085-86.

172. *Randomex, Inc. v. Scopis, Inc.*, 849 F.2d 585, 589-90, 7 U.S.P.Q.2d (BNA) 1050, 1054 (Fed. Cir. 1988).

173. *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 929, 16 U.S.P.Q.2d (BNA) 1033, 1038 (Fed. Cir. 1990). Where a generic description is provided and where commercially-available substitutes exist, the disclosure of a trade name and supplier are "mere surplusage." *Randomex*, 849 F.2d at 589-90, 7 U.S.P.Q.2d (BNA) at 1054.

Rule 14 (modified) would apply to both materials claimed in the patent¹⁷⁴ and materials not claimed but needed to practice the invention.¹⁷⁵

E. Imputed Knowledge Is Rejected as a Standard for Measuring the Adequacy of Best Mode Disclosure

In *Glaxo Inc. v. Novopharm Ltd.*,¹⁷⁶ the Federal Circuit squarely rejected an imputed knowledge standard for the best mode requirement.¹⁷⁷ In that case, Glaxo apparently assigned the task of commercialization of the compound to persons other than the inventor, Crookes.¹⁷⁸ Novopharm argued that the knowledge of those other persons and members of the corporate hierarchy should be imputed to Crookes.¹⁷⁹ The district court rejected that argument,¹⁸⁰ based on the language of § 112 and *Texas Instruments, Inc. v. United States International Trade Commission*.¹⁸¹

The Federal Circuit affirmed the district court's decision and agreed with its analysis.¹⁸² Curiously, while the Federal Circuit concluded that the language of § 112 "could not be clearer,"¹⁸³ it went beyond that language and analyzed prior statutes, other case law, and the apparent congressional intent to limit the reach of § 112.¹⁸⁴ One of the case law passages relied upon by the court will be familiar to the reader: "[T]he sole purpose of the best mode requirement 'is to restrain *inventors* from applying for patents while at the same time concealing from the public preferred embodiments of *their inventions* which *they* have in fact conceived.'"¹⁸⁵

The court's ruling reemphasizes the subjective component of the best mode analysis: it is the knowledge of the named inventor, not that of the inventor's employer or assignee, that is determinative.

174. See, e.g., *Transco*, 38 F.3d at 560-61, 32 U.S.P.Q.2d (BNA) at 1084-85 (considering disclosure of trade name for glass cloth claimed in patent).

175. See, e.g., *Randomex*, 849 F.2d at 589-90, 7 U.S.P.Q.2d (BNA) at 1053 (considering disclosure of trade name for cleaning fluid needed to use claimed invention, a portable apparatus for cleaning disk packs).

176. 52 F.3d 1043, 34 U.S.P.Q.2d (BNA) 1565 (Fed. Cir. 1995).

177. *Glaxo Inc. v. Novopharm Ltd.*, 52 F.3d 1043, 1052, 34 U.S.P.Q.2d (BNA) 1565, 1571 (Fed. Cir. 1995).

178. *Id.* at 1046, 34 U.S.P.Q.2d (BNA) at 1566.

179. *Id.* at 1049, 34 U.S.P.Q.2d (BNA) at 1568.

180. *Id.*, 34 U.S.P.Q.2d (BNA) at 1568-69.

181. 871 F.2d 1054, 10 U.S.P.Q.2d (BNA) 1257 (Fed. Cir. 1989).

182. *Glaxo Inc.*, 52 F.3d at 1050, 34 U.S.P.Q.2d (BNA) at 1570.

183. *Id.* at 1049, 34 U.S.P.Q.2d (BNA) at 1569.

184. *Id.* at 1049-50, 34 U.S.P.Q.2d (BNA) at 1569-70.

185. *Id.* at 1050, 34 U.S.P.Q.2d (BNA) at 1569 (quoting *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 926, 16 U.S.P.Q.2d (BNA) 1033, 1035 (Fed. Cir. 1990) (quoting *In re Gay*, 309 F.2d 769, 772, 135 U.S.P.Q. (BNA) 311, 315 (C.C.P.A. 1962) (emphasis in original))).

The court divined the apparent intent of Congress to limit the application of the best mode requirement to inventors from the language of the statute and Congress' knowledge of the difference between inventors and assignees evidenced in 35 U.S.C. § 100(d) and 35 U.S.C. § 152.¹⁸⁶ The court stated bluntly that "whether Glaxo deliberately walled off the inventor is irrelevant to the issue of [the alleged] failure of his application to disclose the best mode known to him."¹⁸⁷

Judge Mayer dissented, asserting that the court's decision "blesses corporate shell games resulting from organizational gerrymandering and willful ignorance by which one can secure the monopoly of a patent while hiding the best mode of practicing the invention."¹⁸⁸ The dissent argued that an agency relationship existed between the inventor, Crookes, and other Glaxo employees during prosecution of the patent.¹⁸⁹ Imputing the knowledge of an agent to the principal is soundly rooted in law and equity, the dissent argued, and can be applied to protect the interests of the public in receiving full disclosure in exchange for granting the limited monopoly of a patent.¹⁹⁰ It is not appropriate, however, to do so in every case. According to the dissent, the best mode knowledge of others should be imputed to the inventor where there was deliberate concealment of that information from the inventor.¹⁹¹

The views expressed by the dissent echoed the reasoning of the district court in *CPC International Inc. v. Archer Daniels Midland Co.*,¹⁹² decided two years earlier. On rather similar facts, the district court in *CPC International* held a patent invalid for failure of the corporate assignee to disclose the best mode known to it. The district court reasoned:

Because CPC [rather than the inventor] was primarily involved in the preparation and filing of the patent application, the purpose of the statute would not be served merely by looking to [the inventor's] intent The Court must instead consider the information available to both [the inventor] and his agent, CPC, at the time they applied for the patent.¹⁹³

186. *Id.* at 1052, 34 U.S.P.Q.2d (BNA) at 1571 (citing 35 U.S.C. §§ 100(d), 152).

187. *Id.* at 1051, 34 U.S.P.Q.2d (BNA) at 1570.

188. *Id.* at 1053, 34 U.S.P.Q.2d (BNA) at 1571 (Mayer, J., dissenting).

189. *Id.* at 1055, 34 U.S.P.Q.2d (BNA) at 1573 (Mayer, J., dissenting).

190. *Id.*, 34 U.S.P.Q.2d (BNA) at 1574 (Mayer, J., dissenting).

191. *Id.*, 34 U.S.P.Q.2d (BNA) at 1574 (Mayer, J., dissenting).

192. 831 F. Supp. 1091, 30 U.S.P.Q.2d (BNA) 1427 (D. Del. 1993), *aff'd without op.*, 31 F.3d 1176 (Fed. Cir. 1994), *cert. denied*, 115 S. Ct. 1176 (1995).

193. *CPC Int'l Inc. v. Archer Daniels Midland Co.*, 831 F. Supp. 1091, 1108, 30 U.S.P.Q.2d (BNA) 1426, 1441 (D. Del. 1993) (citing *Spectra-Physics, Inc. v. Coherent, Inc.*, 827 F.2d 1524,

The Federal Circuit affirmed this case without opinion.¹⁹⁴ While *CPC International* is interesting in its application of the agency theory, the apparent conflict between the Federal Circuit's affirmance there and its opinion in *Glaxo* is more illusory than real. In the absence of a written opinion, it is not known what issues were appealed to the Federal Circuit. Moreover, as the court is fond of noting, it reviews judgments, not opinions or the language therein, and can affirm the result reached by the district court on any ground supported by the record.¹⁹⁵ It is puzzling, though, that *CPC International* is not cited in *Glaxo*.

In sum, the *Glaxo* decision reinforces the focus of the subjective portion of the best mode inquiry on the knowledge of the inventor. It establishes that courts are not to look beyond that knowledge, even if that knowledge was purposefully limited by isolating the inventor from further work on the invention. The impact of *Glaxo* on corporate research and development and patenting activities may not be as profoundly negative as the dissent predicts. Prior to this decision, corporations could achieve the same result of shielding valuable information from the best mode disclosure requirement by filing patent applications early in the development process, since it has long been clear that best mode is measured as of the filing date. However, the *Glaxo* holding in combination with the *Transco* rule that best mode disclosure need not be updated upon filing a continuation application, certainly provides corporations with a roadmap to the largest loopholes in the best mode requirement.

F. Concealment of the Best Mode for a Claimed Element as Inequitable Conduct

In *Consolidated Aluminum Corp. v. Foseco International*,¹⁹⁶ the Federal Circuit held that intentional concealment of the best mode, coupled with disclosure of an inoperable mode never used by the inventors, constituted inequitable conduct.¹⁹⁷

1535 (Fed. Cir. 1987)).

194. *CPC Int'l Inc. v. Archer Daniels Midland Co.*, 31 F.3d 1176 (Fed. Cir. 1994).

195. *Baxter Healthcare Corp. v. Spectramed, Inc.*, 49 F.3d 1575, 1582 (Fed. Cir. 1995) (citations omitted).

196. 910 F.2d 804, 15 U.S.P.Q.2d (BNA) 1481 (Fed. Cir. 1990).

197. *Consolidated Aluminum Corp. v. Foseco Int'l*, 910 F.2d 804, 809, 15 U.S.P.Q.2d (BNA) 1481, 1484 (Fed. Cir. 1990).

One of the patents in suit, the '917 patent,¹⁹⁸ claimed a method of filtering molten metal with a disposable ceramic filter.¹⁹⁹ The inventors made the filter by pouring a ceramic slurry over a foam core, drying the slurry, and then baking it to burn out the foam core, leaving a ceramic foam filter.²⁰⁰ The inventors failed to disclose the composition of the ceramic slurry they used in making the filter.²⁰¹ Instead, the inventors disclosed a formula that omitted certain critical ingredients and listed incorrect proportions for others.²⁰² The disclosed slurry would not work to form a ceramic foam filter because it lacked binding ingredients.²⁰³

A finding of inequitable conduct depends on balancing two factors: the intent to deceive and the materiality of the misrepresentation.²⁰⁴ The inventors' disclosure of false proportions for the slurry ingredients showed an intent to deceive.²⁰⁵ The Federal Circuit agreed with the district court that failure to disclose the best mode is "inherently material," because § 112 makes best mode disclosure a condition for a valid patent.²⁰⁶ The court thus found that concealment of the true slurry formula and disclosure of an inoperable, fictitious formula constituted inequitable conduct, rendering the patent unenforceable in its entirety.²⁰⁷

The court also found that the inventors' "unclean hands" barred Consolidated from enforcing three related patents.²⁰⁸ In the words

198. The six patents in suit were U.S. Patent Nos. 3,893,917 (the '917 patent); 3,962,081; 4,024,056; 4,081,371; 4,024,212; and 4,075,303. *Id.* at 806, 15 U.S.P.Q.2d (BNA) at 1482.

199. *Id.* at 811, 15 U.S.P.Q.2d (BNA) at 1486. "Inequitable conduct" refers to conduct before the Patent and Trademark Office that amounts to unclean hands. *Foseco*, 910 F.2d at 812. In *Driscoll v. Cebalo*, 731 F.2d 878 (Fed. Cir. 1984), the court observed that 37 C.F.R. § 1.56 is essentially a codification of the clean hands maxim as applied to patent applicants. *Id.* at 884-85.

200. *Foseco*, 910 F.2d at 811, 15 U.S.P.Q.2d (BNA) at 1486.

201. *Id.* at 807-08, 15 U.S.P.Q.2d (BNA) at 1483-84.

202. *Id.* at 808, 15 U.S.P.Q.2d (BNA) at 1484.

203. *Id.* at 807, 15 U.S.P.Q.2d (BNA) at 1483.

204. See *J.P. Stevens & Co. v. Lex Tex Ltd.*, 747 F.2d 1553, 1559, 223 U.S.P.Q. (BNA) 1089 (Fed. Cir. 1984) (discussing requirements for common law fraud), *cert. denied*, 474 U.S. 822 (1985).

205. *Foseco*, 910 F.2d at 809, 15 U.S.P.Q.2d (BNA) at 1484.

206. *Id.* at 808, 15 U.S.P.Q.2d (BNA) at 1484; see also 35 U.S.C. § 112 (1988) (stating requirements for specification in patent application).

207. *Foseco*, 910 F.2d at 809, 15 U.S.P.Q.2d (BNA) at 1484.

208. *Id.* at 812, 15 U.S.P.Q.2d (BNA) at 1487. The reference to "unclean hands" is a reference to the familiar principle in equity that the complainant must come to court with clean hands if he or she wishes to invoke the aid of the court. *Keystone Driller Co. v. General Excavator Co.*, 290 U.S. 240, 244-47 (1933); see also BLACK'S LAW DICTIONARY 1524 (6th ed. 1990) ("[Unclean hands] doctrine simply means that in equity, as in law, plaintiff's fault, like defendant's, may be relevant to question of what, if any, remedy plaintiff is entitled to.").

of the district court, the inequitable conduct in procuring the '917 patent "tainted" the related patents.²⁰⁹

Foseco represents a high-water mark for the power of the best mode defense. Certainly not every violation of the best mode requirement rises to the level of inequitable conduct.²¹⁰ There must be a showing of "intent to deceive" in addition to the failure to disclose the best mode.²¹¹ In *Foseco*, intentional concealment of the best mode was demonstrated by the misrepresentation of an inoperable mode as the best mode.²¹² The rule to be derived from *Foseco* is as follows:

Rule 17: Failure to disclose the best mode is inherently material. Such failure will constitute inequitable conduct if it is coupled with an intent to deceive.

Rule 17 makes clear the gravity of intentional violations of the best mode disclosure requirement. The next section explores some of the issues faced by applicants wishing to comply with the best mode requirement and to avoid the severe consequences of failure to comply.

III. BEST MODE IS MEASURED AS OF THE FILING DATE

A. *The Basic Rule*

The general rule is that the adequacy of the best mode disclosure must be measured against what the inventor knew at the time of filing the patent application.²¹³ There is no duty to update the best mode disclosure in an application after its filing date.²¹⁴ It is evident from these rules that the definition of the filing date is important to the best mode inquiry.

209. *Consolidated Aluminum Corp. v. Foseco Int'l*, 716 F. Supp. 316, 331, 11 U.S.P.Q.2d (BNA) 1817 (N.D. Ill. 1989).

210. *Foseco*, 910 F.2d at 808, 15 U.S.P.Q.2d (BNA) at 1484; *see also In re Hayes Microcomputer Prods., Inc. Patent Litig.*, 982 F.2d 1527, 1546, 25 U.S.P.Q.2d (BNA) 1241, 1255 (Fed. Cir. 1992) (stating that "the proposition that failure to disclose the best mode results in inequitable conduct is legally incorrect").

211. *Foseco*, 910 F.2d at 808, 15 U.S.P.Q.2d (BNA) at 1484; *Hayes*, 982 F.2d at 1546, 25 U.S.P.Q.2d (BNA) at 1255.

212. *See supra* notes 129-39 and accompanying text (discussing court's refusal to find best mode violation). Recall that in *Randomex Inc. v. Scopis, Inc.*, 849 F.2d 585, 590, 7 U.S.P.Q.2d (BNA) 1050, 1054 (Fed. Cir. 1988), there was intentional concealment, but no consequences befell the patentee because what was concealed was held to be outside the scope of what was required to be disclosed.

213. *In re Glass*, 492 F.2d 1228, 1232, 181 U.S.P.Q. (BNA) 31, 34 (C.C.P.A. 1974).

214. *Engel Indus. v. Lockformer Co.*, 946 F.2d 1528, 1534, 20 U.S.P.Q.2d (BNA) 1300, 1304 (Fed. Cir. 1991) (noting that law prohibits amendments to patent application after filing); *see also Wilden Pump & Eng'g Co. v. Pressed & Welded Prods., Inc.*, 655 F.2d 984, 988, 213 U.S.P.Q. (BNA) 282, 286 (9th Cir. 1981) (same).

Typically, the filing date is the date the application was mailed via the Express Mail service of the United States Postal Service or hand-delivered to the Patent and Trademark Office.²¹⁵ Some applications, though, claim entitlement to the filing date of a previous application.²¹⁶ For those applications, is the best mode measured as of the literal date on which the application is filed, or as of the date the previous application was filed?²¹⁷ After briefly reviewing the relevant statutory sections and the prior case law, Part III.C will analyze the Federal Circuit's long-awaited pronouncement on the subject.

Section 119 of the patent statute allows an applicant for a U.S. patent to claim the filing date of a foreign patent if the applicant files a U.S. patent application on the same invention within twelve months after the foreign filing date and meets other statutory requirements.²¹⁸ Section 120 of the patent statute²¹⁹ allows an applicant for a U.S. patent to file a continuation or continuation-in-part (CIP) application and claim the filing date of the parent application²²⁰ for a continuation application and for any part of a CIP that is supported by the parent specification.²²¹ New matter in a CIP application that is not supported by the disclosure in the parent application cannot gain the benefit of the filing date of the parent application.²²²

B. *The Debate over Applications Claiming Priority Pursuant to § 120*

Until 1994 in *Transco Products Inc. v. Performance Contracting, Inc.*,²²³ the Federal Circuit had not specifically addressed the issue of whether an applicant who claims a priority filing date under § 120 must disclose a best mode discovered after that priority date. Before

215. 37 C.F.R. § 1.10 (1995) (discussing procedure for filing by mail).

216. 35 U.S.C. §§ 119, 120 (1988) (setting forth requirements for claiming entitlement to filing date of previously-filed U.S. or foreign patent application).

217. See, e.g., CHISUM, *supra* note 17, at § 7.05[2] (reasoning that continuation and continuation-in-part (CIP) applications are new applications; therefore, updated best mode disclosure should be required for applications filed pursuant to § 120); Mark A. Litman, *Problems with the Best Mode Requirement of 35 U.S.C. § 112 in Applications Claiming Priority Under 35 U.S.C. § 119 and 35 U.S.C. § 120*, 61 J. PAT. OFF. SOC'Y 431, 438 (1979) (concluding that new best mode disclosure is necessary for § 119 and CIP applications, but not for continuation applications, which law considers to be part of original application).

218. 35 U.S.C. § 119.

219. *Id.* § 120.

220. The term "parent application" refers to the preceding application upon which the continuing application claims priority. *Transco Prods. Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 556, 32 U.S.P.Q. 2d (BNA) 1077, 1080 (Fed. Cir. 1994).

221. See 35 U.S.C. § 120. The term "parent specification" refers to the specification of the parent application.

222. *Id.*

223. 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed. Cir. 1994).

Transco, two views had been expressed in the case law. Under one view, there would be no duty to disclose a newly-discovered best mode in a continuing application because the continuing application has the filing date of the original application and best mode compliance is measured as of the filing date.²²⁴ The other view was that a continuing application is a new application subject to the § 112 disclosure requirements; thus, there would be a duty to disclose a newly-discovered best mode in the continuing application.²²⁵

The district court in *Johns-Manville Corp. v. Guardian Industries*²²⁶ espoused the first view in holding that a CIP applicant need not update the best mode disclosure of the parent application.²²⁷ The Federal Circuit affirmed without a written opinion.²²⁸

In *Carter-Wallace, Inc. v. Riverton Laboratories, Inc.*,²²⁹ the Second Circuit espoused the second view by assuming, without discussion, that best mode compliance was to be measured as of the CIP filing date.²³⁰ The existence of diverging opinions and the absence of Federal Circuit discussion of the issue left patent practitioners and applicants in a state of uncertainty, facing serious consequences no matter which way they resolved the question.²³¹ The patentee in *Transco Products Inc. v. Performance Contracting, Inc.*²³² learned of these risks first-hand when the district court invited briefing on the

224. See, e.g., *Dow Chem. Co. v. American Cyanamid Co.*, 615 F. Supp. 471, 482, 229 U.S.P.Q. (BNA) 171, 179 (E.D. La. 1985) (finding that updated best mode disclosure was not required for reissue patent), *aff'd on other grounds*, 816 F.2d 617, 2 U.S.P.Q.2d 1350 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 849 (1987); *Johns-Manville Corp. v. Guardian Indus.*, 586 F. Supp. 1034, 1065, 221 U.S.P.Q. (BNA) 319, 334 (E.D. Mich. 1983) (finding that subsequent applications are entitled to benefit of earlier filing date under certain conditions), *aff'd*, 770 F.2d 178 (Fed. Cir. 1985) (table).

225. See CHISUM, *supra* note 17, § 7.05[3] (citing *Carter-Wallace, Inc. v. Riverton Lab., Inc.*, 433 F.2d 1034, 1038, 167 U.S.P.Q. 656, 659 (2d Cir. 1970)).

226. 586 F. Supp. 1034, 221 U.S.P.Q. (BNA) 319 (E.D. Mich. 1983).

227. *Johns-Manville Corp. v. Guardian Indus.*, 586 F. Supp. 1034, 1065, 221 U.S.P.Q. (BNA) 319, 345 (E.D. Mich. 1983).

228. *Johns-Manville Corp. v. Guardian Indus. Corp.*, 770 F.2d 178 (Fed. Cir. 1985) (table), *aff'g* 586 F. Supp. 1034, 221 U.S.P.Q. (BNA) 319 (E.D. Mich. 1983).

229. 433 F.2d 1034, 167 U.S.P.Q. (BNA) 656 (2d Cir. 1970), *aff'g* 304 F. Supp. 357, 164 U.S.P.Q. (BNA) 73 (S.D.N.Y. 1969).

230. *Carter-Wallace, Inc. v. Riverton Lab., Inc.*, 433 F.2d 1034, 1038, 167 U.S.P.Q. (BNA) 656, 659 (2d Cir. 1970).

231. Specifically, practitioners and applicants risked having patent claims later held invalid for failure to disclose the new best mode. Conversely, the disclosure of a new best mode would likely constitute new matter, causing the application to lose its entitlement to an earlier filing date.

232. 821 F. Supp. 537, 28 U.S.P.Q.2d (BNA) 1739 (N.D. Ill. 1993), *rev'd in part, vacated in part, and remanded*, 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed. Cir. 1994).

issue of invalidity for failure to update the best mode disclosure upon filing a continuation application.²³³

After reviewing the briefs, the district court entered summary judgment, holding four claims of the patent invalid.²³⁴ The patentee appealed, and the Federal Circuit finally addressed the issue of updating the best mode disclosure upon filing a continuing application.²³⁵ The court, however, did not acknowledge that it was delivering a much-anticipated pronouncement of law; it considered the answer to be obvious and "widely accepted."²³⁶

The answer provided by the Federal Circuit is that there is no duty to update the best mode disclosure for common subject matter in continuing applications.²³⁷ The contours of this rule are discussed at length in Part C of this section.²³⁸ Part C also provides an analysis of the district court²³⁹ and Federal Circuit opinions in *Transco*.²⁴⁰

C. Continuation Practice After *Transco*

Disclosure requirements for continuing applications must be further explored in light of *Transco Products Inc. v. Performance Contracting, Inc.*²⁴¹ This section begins with an analysis of the *Transco* decisions of the district court and the Federal Circuit, and then sets forth a suggested method for applying the Federal Circuit's holding to CIP applications.

The district court in *Transco* held that the patent claims involved in the suit were invalid for three best mode violations.²⁴² Two of the

233. *Transco Prods. Inc. v. Performance Contracting, Inc.*, 821 F. Supp. 537, 540, 28 U.S.P.Q.2d (BNA) 1739, 1740 (N.D. Ill. 1993), *rev'd in part, vacated in part, and remanded*, 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed. Cir. 1994).

234. *See id.* at 554, 28 U.S.P.Q.2d (BNA) at 1752 (finding that *Transco* was entitled to summary judgment as matter of law because there was no genuine issue of material fact).

235. *Transco Prods. Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 555, 32 U.S.P.Q.2d (BNA) 1077, 1080 (Fed. Cir. 1994) (explaining that "continuing application" refers to continuation, continuation-in-part, and divisional applications).

236. *Id.* at 559 n.9, 32 U.S.P.Q.2d (BNA) at 1083 n.9.

237. *Id.* at 557, 32 U.S.P.Q.2d (BNA) at 1082 (stating that application is "entitled to the benefit" of filing date of earlier application for common subject matter).

238. *See infra* Part III.C.

239. *See infra* text accompanying note 242.

240. *See infra* text accompanying note 254.

241. 821 F. Supp. 537, 28 U.S.P.Q.2d (BNA) 1739 (N.D. Ill. 1993), *rev'd in part, vacated in part, and remanded*, 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed. Cir. 1994).

242. *See Transco Prods. Inc. v. Performance Contracting, Inc.*, 821 F. Supp. 537, 540, 28 U.S.P.Q.2d (BNA) 1739, 1740 (N.D. Ill. 1993) (holding patent invalid for failure to disclose trade name and supplier of preferred insulation, failure to meet best mode disclosure requirements that are same for continuation patent application as for original filing, and failure to disclose in continuation application preferred parallel placement of fasteners and use of steel hooks), *rev'd in part, vacated in part, and remanded*, 38 F.3d 551, 32 U.S.P.Q.2d (BNA) 1077 (Fed.

violations were based on the inventor's failure to update the best mode disclosure upon filing a Rule 60 continuation application.²⁴³

The patent claimed thermal insulation for pipes in nuclear reactor containment areas.²⁴⁴ The original patent application claimed heat-resistant nylon hooks and loops and depicted these fasteners as being oriented circumferentially around the pipe insulation.²⁴⁵ The evidence showed, however, that by the time the continuation application was filed, the inventor knew from field tests that nylon was incapable of withstanding the high temperatures of the intended environment and therefore decided to use stainless steel hooks instead.²⁴⁶ The evidence also showed that the inventor had employed longitudinally-oriented fasteners in the field tests rather than the circumferentially-oriented fasteners depicted in the patent drawings.²⁴⁷

Noting the absence of binding precedent from the Federal Circuit and the C.C.P.A., the district court turned to opinions from other courts.²⁴⁸ The district court cited *Carter-Wallace, Inc. v. Riverton Laboratories, Inc.*,²⁴⁹ and distinguished *Sylgab Steel & Wire Corp. v. Imoco-Gateway Corp.*²⁵⁰ and *Johns-Manville Corp. v. Guardian Industries*,²⁵¹ concluding that a duty to disclose later-discovered best mode

Cir. 1994). Interestingly, the district court *sua sponte* called for the submission of summary judgment briefs on the best mode issue. *Id.*

243. *Id.* at 537-38, 28 U.S.P.Q.2d (BNA) at 1739. Rule 60 derives from 37 C.F.R. § 1.60 (1995). This regulation governs continuation (as opposed to continuation-in-part) applications. According to the Federal Circuit, the inventor filed the continuation application to secure examination of an amendment after final rejection. *Transco*, 38 F.3d at 559, 32 U.S.P.Q.2d (BNA) at 1083. The examiner had refused to enter the amendment after final rejection because it did not comport with the procedural requirements of 37 C.F.R. § 1.116. *Id.*, 32 U.S.P.Q.2d (BNA) at 1083.

244. *Id.* at 554, 32 U.S.P.Q.2d (BNA) at 1077.

245. *Id.*, 32 U.S.P.Q.2d (BNA) at 1077.

246. *Id.*, 32 U.S.P.Q.2d (BNA) at 1077. On remand, could the evidence that the nylon hooks in claim 1 "burnt off" in field tests be used to challenge the validity of that claim on enablement/inoperability grounds?

247. *Id.*, 32 U.S.P.Q.2d (BNA) at 1079.

248. *Id.* at 548, 28 U.S.P.Q.2d (BNA) at 1747 (noting that question of whether applicant filing continuation or continuation-in-part application under § 120 must disclose best mode described after initial application was filed has never been explicitly addressed by Federal Circuit).

249. 433 F.2d 1034, 1038, 167 U.S.P.Q. (BNA) 656, 659 (2d Cir. 1970) (assuming, without discussion, that CIP filing date was appropriate reference date for evaluating best mode).

250. 357 F. Supp. 657, 178 U.S.P.Q. (BNA) 22 (N.D. Ill. 1973) (finding no duty to update best mode disclosure, because update would constitute new matter).

251. 586 F. Supp. 1034, 221 U.S.P.Q. (BNA) 319 (E.D. Mich. 1983), *aff'd without published op.*, 770 F.2d 178 (Fed. Cir. 1985).

information existed and had been breached by the inventor.²⁵² Accordingly, the district court held the patent claims invalid.²⁵³

The Federal Circuit reversed the district court's holding, basing its decision primarily on its construction of § 120.²⁵⁴ Section 120 provides that, with respect to common subject matter, a continuing application must have the benefit of the filing date of the earlier application.²⁵⁵ Section 120 applies to the best mode requirement.²⁵⁶ Thus, a continuing application has the benefit of the best mode disclosure of the prior application.²⁵⁷

The Federal Circuit noted that its ruling was consistent with the treatment accorded reissue applications²⁵⁸ and applications claiming priority under a foreign application pursuant to § 119.²⁵⁹ The Federal Circuit further stated that the ruling in *Transco* was consistent with the public policy of encouraging disclosure because it allowed inventors to file applications early, continue to improve their inventions, and, through the continuing application practice, also secure protection for the improvements.²⁶⁰

252. *Transco*, 821 F. Supp. at 548, 28 U.S.P.Q.2d (BNA) at 1747.

253. *Id.* at 554, 28 U.S.P.Q.2d (BNA) at 1750. The patent contained four claims, only one of which was an independent claim. *Id.* at 540-41, 28 U.S.P.Q.2d (BNA) at 1745. Thus, the determination that the independent claim was invalid for failure to update the best mode disclosure rendered the three dependent claims invalid as well. *Id.* at 554, 28 U.S.P.Q.2d (BNA) at 1750.

254. *Transco*, 38 F.3d at 556-57, 32 U.S.P.Q.2d (BNA) at 1081-82 (holding that § 120's language means having benefit of earlier filed application).

255. 35 U.S.C. § 120 (1988) (stating that application filed "by an inventor . . . named in the previously filed application shall have the same effect, as to such invention, as though filed on the date of the prior application").

256. *See Transco*, 38 F.3d at 557, 32 U.S.P.Q.2d (BNA) at 1082 (holding that § 120 does not exempt best mode requirement from its reach).

257. *Id.*, 32 U.S.P.Q.2d (BNA) at 1082.

258. *Id.*, 32 U.S.P.Q.2d (BNA) at 1082 (citing *Dow Chem. Co. v. American Cyanamid Co.*, 615 F. Supp. 471, 482 (E.D. La. 1985), *aff'd*, 816 F.2d 617 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 849 (1987)). Reissue is a procedure whereby an issued patent can be reissued to correct defects in the patent. *See* 35 U.S.C. § 251. The patentee or assignee files an application similar to a patent application and it is subjected to examination just as a new patent application would be. *Id.*; 37 C.F.R. §§ 1.171, 1.176 (1995).

259. *Transco*, 38 F.3d at 558, 32 U.S.P.Q.2d (BNA) at 1082 (citing *Tyler Refrigeration Corp. v. Kysor Indus.*, 601 F. Supp. 590, 605, 225 U.S.P.Q. (BNA) 492, 499 (D. Del. 1985), *aff'd*, 777 F.2d 687, 227 U.S.P.Q. (BNA) 845 (Fed. Cir. 1985)); *see also* *Standard Oil Co. v. Montedison, S.p.A.*, 494 F. Supp. 370, 388, 206 U.S.P.Q. (BNA) 676, 695 (D. Del. 1980), *aff'd*, 664 F.2d 356, 212 U.S.P.Q. (BNA) 327 (3d Cir. 1982), *cert. denied*, 456 U.S. 915 (1982).

The disparity in treatment of applications claiming priority under § 119 and § 120 that would result from the district court's ruling in *Transco* caused practitioners to decry the ruling. *See* Harold C. Wegner, *Continued Prosecution in a Continuation Application, or a Transco Best Mode Trap for the Unwary?*, 75 J. PAT. & TRADEMARK OFF. SOC'Y 837 (1993). Differential treatment of applications under § 119 and § 120 conflicted with Federal Circuit precedent. *See In re Gosteli*, 872 F.2d 1008, 1011, 10 U.S.P.Q.2d (BNA) 1614, 1616 (Fed. Cir. 1989) (stating that applications claiming priority under § 119 and § 120 should be treated symmetrically).

260. *Transco*, 38 F.3d at 558, 32 U.S.P.Q.2d (BNA) at 1082.

Rejecting the assertion that public policy mandates updated best mode disclosure when filing every continuing application, the court opined that such a rule would instead discourage inventors from making early disclosures of their inventions.²⁶¹ The court reasoned that an updated best mode disclosure would constitute new matter that would deprive at least some of the claims in the continuing application of the earlier application's filing date.²⁶² Much of the value of continuing application practice to inventors would be lost.

Further, the practical implications of such a rule would hinder continuing application practice.²⁶³ Currently, continuing applications filed pursuant to Rules 60 and 62 do not require a new oath, and consequently may be filed without input from the inventor.²⁶⁴ Requiring updated best mode information would require the patent agent or attorney to discuss that requirement with the inventor and receive the inventor's input before filing any continuing application.²⁶⁵

Finally, the Federal Circuit noted that many continuing applications are filed in response to actions taken by the Patent and Trademark Office, such as allowing amendments after final rejections to be presented in a Rule 62 continuation application or issuing a restriction requirement.²⁶⁶ Burdening inventors with an updated disclosure requirement and the concomitant loss of filing date is unfair where the continuation or divisional application was required by actions taken by the Patent and Trademark Office primarily for administrative convenience.²⁶⁷

The Federal Circuit in *Transco* announced a proposition that we label as Rule 18:

Rule 18: The date for evaluating the adequacy of the best mode disclosure in a continuing application is the filing date of the earlier application as to common subject matter.²⁶⁸

While the Federal Circuit's opinion clearly states the above rule, it does not make clear the contours of the rule. Specifically, the long-awaited pronouncement did not eliminate the uncertainty surround-

261. *Id.*, 32 U.S.P.Q.2d (BNA) at 1082.

262. *Id.*, 32 U.S.P.Q.2d (BNA) at 1083.

263. *Id.*, 32 U.S.P.Q.2d (BNA) at 1083.

264. *Id.* at 558 & n.8, 32 U.S.P.Q.2d (BNA) at 1083 & n.8; see 37 C.F.R. §§ 1.60, 1.62 (1995).

265. *See Transco*, 38 F.3d at 558, 32 U.S.P.Q.2d (BNA) at 1083.

266. *Id.* at 558, 32 U.S.P.Q.2d (BNA) at 1083; see also Wegner, *supra* note 259, at 838 (noting that Patent and Trademark Office examiners' interpretations and applications of Rule 116(b) vary).

267. *See Transco*, 38 F.3d at 558, 32 U.S.P.Q.2d (BNA) at 1083 (holding that disclosure requirement for administrative convenience places unreasonable burden on inventor).

268. *Id.* at 557, 32 U.S.P.Q.2d (BNA) at 1081.

ing the duty to disclose updated best mode information in a CIP application. The following section explores the ambiguities inherent in the rule and suggests a method for applying the rule to CIP applications in a manner that eliminates those ambiguities.

The Federal Circuit's reference to "common subject matter" in the *Transco* rule is ambiguous.²⁶⁹ To understand this ambiguity, consider the situation where a CIP claim is drawn to four elements, one of which was not disclosed in the parent application. Well-settled law indicates that such a claim is entitled only to the filing date of the CIP application.²⁷⁰ The *Transco* rule, however, provides that the date for evaluating the best mode disclosure is the date of the parent application²⁷¹ with respect to common subject matter.²⁷² Therefore, the question remains whether the inventor may rely on the original best mode disclosure for the three "old" elements, or, alternatively, whether the best mode disclosure must be updated for the old elements in addition to disclosing the best mode for the new element.

While the Federal Circuit did not explicitly consider this question, the conservative answer is that the inventor must disclose the best mode for practicing the invention recited in the new claim as of the date of filing the CIP application. This approach would prevent the claim from being held invalid under § 112 for failure to disclose the best mode known at the time of filing. Would this approach, however, leave other claims vulnerable to rejection or invalidation under § 102 or § 103? In other words, does the introduction of a new best mode for one (or more) of the elements of a claim, fully supported in the parent application, deprive that claim of its entitlement to the filing date of the parent application?

To probe this question, the "old" elements will be referred to as A, B, and C, and the new element as D. Consider a parent application containing only one claim, to A, B, and C. Also, consider a CIP application containing only two claims, the first to A, B, and C and the second to A, B, C, and D.

The best mode for practicing A, B, and C was disclosed in the parent application when it was filed. Since that time, however, the inventor has found a new preferred mode for element C. Disclosure

269. *Id.*, 32 U.S.P.Q.2d (BNA) at 1082.

270. See MANUAL OF PATENT EXAMINING PROCEDURE § 201.11 [hereinafter MPEP]; P.J. Federico, *Commentary on the New Patent Act*, 35 U.S.C.A. § 1, at 31-33 (1954).

271. *Transco*, 38 F.3d at 556, 32 U.S.P.Q.2d (BNA) at 1080 (citing MPEP, *supra* note 270, § 201.04).

272. *Id.* at 557, 32 U.S.P.Q.2d (BNA) at 1082.

of that mode seems necessary to validate the second claim, which has only the later filing date of the CIP, because that mode is the best known to the inventor at the time of filing the CIP.

The inventor's disclosure of the new best mode for element C, however, will introduce new matter into the specification.²⁷³ Will that new matter deprive the first claim (which also includes element C) of its earlier filing date, and thus expose the first claim to potential rejection by the Patent and Trademark Office, or invalidation by the courts, if the invention was rendered anticipated or obvious by developments between the filing dates of the parent application and the CIP application?²⁷⁴

The answer is a cautious no. This conclusion is reached from an ordered application of the following established rules. Each claim is evaluated independently of the other claims for best mode compliance.²⁷⁵ In addition, each claim in a CIP application is evaluated individually to determine whether it is entitled to the filing date of the parent application.²⁷⁶ For subject matter common to both the parent and the CIP application, the date for evaluating the best mode disclosure in the CIP application is the date of the parent application.²⁷⁷

Applying these rules produces a test in which one first looks to the parent application to determine whether the claim at issue is supported by the parent specification and thus, entitled to the filing date of the parent application. If it is, then one next applies the best mode analysis from *Chemcast Corp. v. Arco Industries*,²⁷⁸ asking

273. See *id.* at 558, 32 U.S.P.Q.2d (BNA) at 1083 (determining that introduction of new best mode disclosure would constitute injection of "new matter" into application). "New matter" is a term of art in patent law. Cf. *In re Oda*, 443 F.2d 1200, 1203 (C.C.P.A. 1971) (stating that "new matter" is ambiguous term of art requiring case-by-case determination of what constitutes new matter and what does not). Although a full discussion of this subject is beyond the scope of this Article, CHISUM, *supra* note 17, § 11.04 addresses this issue more fully.

274. The loss of the earlier filing date would expose the claims to all prior art references dated before the CIP application and to statutory bar activities occurring prior to the CIP application date. See 35 U.S.C. §§ 102, 103 (1988); *Paperless Accounting, Inc. v. Bay Area Rapid Transit Sys.*, 804 F.2d 659, 662, 231 U.S.P.Q. (BNA) 649, 651 (Fed. Cir. 1986) (concerning § 102(b) statutory bar); *Ex parte Engelhardt*, 208 U.S.P.Q. (BNA) 343, 347 (Pat. & Trademark Off. Bd. App. 1980).

275. See *Engel Indus. v. Lockformer Co.*, 946 F.2d 1528, 1531, 20 U.S.P.Q.2d (BNA) 1300, 1301-02 (Fed. Cir. 1991) (stating each claim must be individually considered for compliance with best mode requirement).

276. See *Waldemar Link, GmbH & Co. v. Osteonics Corp.*, 32 F.3d 556, 558, 31 U.S.P.Q.2d (BNA) 1855, 1857 (Fed. Cir. 1994) (holding that CIP application may be entitled to different priority dates for different claims).

277. See *Transco Prods. Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 557, 32 U.S.P.Q.2d (BNA) 1077, 1082 (Fed. Cir. 1994) (asserting that application is entitled to filing date of earlier application as to common subject matter).

278. 913 F.2d 923, 16 U.S.P.Q.2d (BNA) 1033 (Fed. Cir. 1990).

(1) whether the inventor contemplated a best mode relevant to that claim at the time of filing the parent application, and (2) if so, whether the inventor adequately disclosed that mode.²⁷⁹ If the disclosure in the parent application passes the *Chemcast* test, the claim in the CIP application meets the best mode requirement.²⁸⁰

In our example, claim 1 is entitled to the filing date of the parent application. Claim 1 is either invalid for failure to adequately disclose the best mode then known,²⁸¹ or it is not valid on best mode grounds. Compliance with the best mode requirement can be thought of as employing a snapshot test, concerned only with a particular moment in time. That moment, of course, is the earliest filing date to which the claim in question is entitled. The subsequent disclosure of a better mode, discovered later, does not change this result.²⁸²

Applying the above test to claim 2, one finds that claim 2 is not entitled to the filing date of the parent application, because element D was not supported by the disclosure in the parent application. Thus, the date for evaluating this claim's best mode compliance is the filing date of the CIP. At that time, the inventor contemplated a *different* best mode for element C, as well as a best mode for new element D.²⁸³ This information would have to be added to the descriptive portion of the CIP specification²⁸⁴ to comply with the best mode requirement of § 112. Claim 2 was never entitled to a filing date earlier than that of the CIP; therefore, the introduction of new matter does not adversely impact its entitlement to a filing date. The introduction of new best mode information will not adversely impact the entitlement of claim to the parent application

279. *Chemcast Corp. v. Arco Indus.*, 913 F.2d 923, 927-28, 16 U.S.P.Q.2d (BNA) 1033, 1036 (Fed. Cir. 1990); see also *supra* Part I.B (discussing two-part test for best mode compliance developed from *Chemcast*).

280. See *In re Hogan*, 559 F.2d 595, 604-07, 194 U.S.P.Q. (BNA) 527, 538 (C.C.P.A. 1977) (ruling that, on question of enablement, where continuing application is entitled to earlier filing date, court must consider whether earlier specification enabled invention; if so, "the inquiry under section 112, first paragraph, is at an end").

281. See *Ex parte Engelhardt*, 208 U.S.P.Q. (BNA) 343, 347 (Pat. & Trademark Off. Bd. App. 1980) (holding CIP claims invalid where parent application failed to comply with first paragraph of § 112); *In re Hay*, 534 F.2d 917, 920, 189 U.S.P.Q. (BNA) 790, 792 (C.C.P.A.) (explaining that failure to comply with best mode requirement of § 112 constituted defective disclosure rendering patent invalid), *cert. denied*, 429 U.S. 977 (1976).

282. See *Hogan*, 559 F.2d at 605, 194 U.S.P.Q. (BNA) at 537 (ruling that where earlier application provided sufficient enablement, "fact of that enablement was established for all time").

283. Under the test proposed here, a new best mode disclosure would be necessary even if the inventor did not contemplate a best mode for new element D.

284. The claims are part of the specification as well. 35 U.S.C. § 112 (1988); *In re Benno*, 768 F.2d 1340, 1346, 226 U.S.P.Q. (BNA) 683, 686-87 (Fed. Cir. 1985). Thus, the portion exclusive of the claims is referred to as the "descriptive portion" of the specification.

filing date, either. Once best mode compliance as of the relevant date is established, subsequent events will not nullify that compliance.²⁸⁵

The question of new matter can be intertwined with the question of best mode compliance.²⁸⁶ If the question is approached from the standpoint of new matter, the starting point is the concept that the new best mode disclosure would constitute new matter.²⁸⁷ Any claims that depend on that new matter for support would only be entitled to the filing date of the CIP. Claims that were supported by the parent application will not, however, depend on the new matter for support. In other words, claims that were supported in the first instance by the parent application do not become unsupported merely because new matter may touch their subject matter as well.²⁸⁸

This result is consistent with the rule that the inventor is under no duty to update the best mode disclosure after filing the application.²⁸⁹ This result is practical as well. If the inventor chooses to allow the parent application to issue as a patent with a claim to elements A, B, and C, that patent claim would not be invalidated by the disclosure in a continuing application of an after-discovered best mode for C. The fact that the inventor chooses instead to copy a claim from the parent into the continuing application and abandon the parent should not yield a different result as to the validity of the copied claim.²⁹⁰

This result is also consistent with public policy. The public receives the benefit of the new best mode disclosure and the inventor is allowed to keep the parent application filing date for claims support-

285. Cf. *Hogan*, 559 F.2d at 605, 194 U.S.P.Q. (BNA) at 537 (stating that if application provides sufficient enablement at time of original application, enablement is established permanently).

286. See *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1574, 24 U.S.P.Q.2d (BNA) 1401, 1414 (Fed. Cir. 1992) (discussing intersection of best mode compliance and question of new matter).

287. *Transco Prods. Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 558, 32 U.S.P.Q.2d (BNA) 1077, 1083 (Fed. Cir. 1994). Whether a new best mode disclosure would constitute new matter in every case is questionable. At least one court has held that adding a specific example of a generic term found in the original application does not constitute new matter. See *Chemcast Corp. v. Arco Indus.*, 5 U.S.P.Q.2d (BNA) 1225, 1237 (E.D. Mich. 1987) (finding that substitution of "polyvinyl chloride" for "vinyl" did not constitute new matter).

288. See *Hogan*, 559 F.2d at 605, 194 U.S.P.Q. (BNA) at 537 (holding that if earlier application provides sufficient enablement, enablement is established for all time).

289. See *Engel Indus. v. Lockformer Co.*, 946 F.2d 1528, 1534, 20 U.S.P.Q.2d (BNA) 1300, 1304 (Fed. Cir. 1991) (stating that "disclosure is closed when the patent application is filed").

290. See *Hogan*, 559 F.2d at 604, 194 U.S.P.Q. (BNA) at 535 (stating that "[n]o rational distinction can be made in the treatment accorded to the subject matter of an original application and to the same subject matter disclosed in a continuing application").

ed by the parent application in accordance with § 112.²⁹¹ An opposite rule would be unfair, as illustrated by reference to the contract theory of the patent grant.²⁹² Under that theory, the public grants the inventor an exclusive right in exchange for disclosure of the invention. Having once made that bargain with respect to the original application, the public cannot require the inventor to give up the filing date that the inventor had "contracted" for earlier, unless the public also gives new consideration.

D. The Relevant Trade-Related Aspects of Intellectual Property Rights (TRIPs) Provision

The agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), which was included in the overall Uruguay Round Agreements,²⁹³ succinctly addresses the best mode disclosure update issue. The TRIPs agreement provides, "Members . . . may require the applicant to indicate the best mode . . . known to the inventor . . . at the filing date or, where priority is claimed, at the priority date of the application."²⁹⁴ It is clear that under this rule, there would be no duty to update a best mode disclosure where the application claims a priority date.

CONCLUSION

In analyzing case law on the best mode, it becomes apparent that with the advent of the Federal Circuit, doctrinal stability in this area has been increased. Two of the most important pronouncements

291. See *Transco*, 38 F.3d at 558, 32 U.S.P.Q.2d (BNA) at 1082-83 (asserting that public policy does not require that public receive best mode disclosure in all continuing applications).

292. See Amber L. Hatfield, *Life After Death for Assignor Estoppel: Per Se Application to Protect Incentives to Innovate*, 68 TEX. L. REV. 251, 256 (1989) (discussing contract theory of patent law, which views granting of patent as award or quid pro quo for inventor's disclosure to public).

293. On April 15, 1994, the United States and other members of the General Agreement on Tariffs and Trade (GATT) signed the Uruguay Round Agreements, which included TRIPs. See James L. Bikoff & David I. Wilson, *Intellectual Property Protection under NAFTA and TRIPs and the Future of Bilateral Intellectual Property Initiatives (pt. I)*, PAT. WORLD, Oct. 1994, at 21, 22. The Uruguay Round Agreements Act was signed into law on December 8, 1994. Uruguay Round Agreements Act, Pub. L. No. 103-465, 108 Stat. 4809 (codified as amended at 19 U.S.C.A. § 3501 (West Supp. 1995)). The Act amended the patent statute to conform with the TRIPs provisions of GATT. The changes to the statute require changes in Patent and Trademark Office practice. The specific sections of the statute affected by the Act include 35 U.S.C. § 104 (allowing inventive activity in NAFTA or World Trade Organization country to establish priority of invention); 35 U.S.C. § 111 (providing for filing of provisional applications); and 35 U.S.C. § 154 (changing patent term from 17 years from issuance to 20 years from filing). Section 112 was not amended. The Patent and Trademark Office has published proposed rules at 59 Fed. Reg. 63951 (Dec. 12, 1994). For an overview of the changes to that patent statute, see Michael W. Blommer, *What's in the GATT Bill?*, AIPLA BULL., Oct.-Nov.-Dec. 1994, at 11.

294. *Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods* § 5 Art. 29, reprinted in 8 WORLD INTEL. PROP. REP. (BNAI) 135, 141 (May 1994).

from the Federal Circuit came in *Chemcast Corp. v. Arco Industries*, which established a two-step analytical method for evaluating best mode compliance, and *Transco Products Inc. v. Performance Contracting, Inc.*, which answered many, but not all, of the questions about the need to update best mode disclosure in continuing application practice. This Article traced the development of the Federal Circuit's best mode jurisprudence and suggested succinct rules that the authors derived from studying that jurisprudence. These rules are intended to guide both patent applicants and patent litigants through the thicket of the best mode requirement.

