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THE IMPORTANCE OF CORRECT INVENTORSHIP

I. INTRODUCTION

Based on the Constitution's grant of power to Congress to promote science, a patent can be issued only to its inventors.¹ If the patent application or the issued patent contains an incorrect listing of inventors, the patent could be invalid.² Further, even if inventorship is corrected,³ the patent may be practically invalid against a particular alleged infringer. The latter situation is best illustrated by *Ethicon, Inc. v. United States Surgical Corp.*⁴

Because inventorship in Ethicon, Inc.'s (Ethicon) patent was incorrectly determined and stated at the time the patent issued, United States Surgical Corp. (U.S. Surgical) was able to get a license to the unnamed inventor's rights in the invention.⁵ The court permitted correction of inventorship, thus supporting patent validity; however, because the non-joined inventor had granted a license to U.S. Surgical, Ethicon could not sue U.S. Surgical for infringement, making the patent "practically invalid" with respect to U. S. Surgical. Had Ethicon realized that the unnamed individual was an inventor, it could have avoided this problem by obtaining an assignment from this inventor. Thus, knowledge of who should be named on a patent application

¹ U.S. CONST. art. I, § 8, cl. 8. "[Congress shall have the power][t]o promote the Progress of Science and useful Arts, by securing for limited Times to . . . Inventors the exclusive Right to their . . . Discoveries." This requirement was integrated by Congress into the Patent Act. See 35 U.S.C. §§ 101, 111 (1994) (requiring that patents be issued to an inventor, i.e., the person who invented the subject matter).

² See *infra* Part V.A (discussing the requirement of lack of deceptive intent in the correction of inventorship errors). Though sections 116 and 256 of the Patent Act were amended in 1982 to allow for correction of inventorship in more situations, thus making correction an easier process, each section requires a lack of deceptive intent for the correction of inventorship errors. 35 U.S.C. §§ 116, 256 (1994). If deceptive intent is present on the part of the true "inventive entity," then correction will not be allowed and the patent will be invalid.

³ See *infra* Part V (discussing 35 U.S.C. §§ 116, 256 regarding correction of inventorship).

⁴ *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 45 U.S.P.Q.2d (BNA) 1545 (Fed. Cir. 1998), *cert. denied* 119 S. Ct. 278 (1998).

⁵ Such a situation is less likely to arise in the case of a copyrighted work because copyright law states that in cases of works made for hire, the author is the employer, not the employee who created the work. 17 U.S.C. § 201(b) (1994). In contrast, patent law does not recognize such a concept and thus employers typically require their employees to assign their rights in any patents which result from their employment to the employer (the assignee). If such assignments are not made, as occurred in *Ethicon, Inc.*, the inventor may do as he pleases with his rights; he can even assign them to a competitor.

as an inventor can prevent complications during interferences and/or infringement proceedings. Further, a correct determination of inventorship may save one's patent from "absolute" or "practical" invalidation.

This Note will examine (1) how inventorship is determined, (2) the effect of the 1984 Patent Act Amendments on determinations of joint inventorship, (3) the collaboration requirement of joint inventorship, (4) how inventorship is corrected in an issued patent and a pending application, (5) the rights of joint inventors as cotenants, and (6) a resolution of the problems presented by *Ethicon, Inc.*

II. DEFINING INVENTORSHIP

A patent is issued to an "inventorship entity," which can consist of either sole or joint inventor(s).⁶ Though inventorship has two parts, conception and reduction to practice, determinations of inventorship are based primarily on the conception of the invention.⁷ Therefore, sole inventorship occurs when one person conceives of the solution to a problem, which constitutes the subject matter of the invention, and joint inventorship results when more than one person contributes to the conception of the solution. Defining what constitutes "conception" will be examined below.

A. CONCEPTION

Determinations regarding conception often arise in interference proceedings⁸ or as a defense to an accusation of patent infringement. In

⁶ "Joint inventors" can also be called "co-inventors."

⁷ See Robert W. Harris, *Conceptual Specificity as a Factor in Determination of Inventorship*, 67 J.PAT. & TRADEMARK OFF. SOC'Y 315, 315-16 (1985) (stating that

[f]requently, the *fact* of actual or constructive reduction to practice will not be a serious issue when patent counsel is evaluating an inventorship problem. . . . If, for example, counsel has drafted a patent application which adequately discloses and claims what appears to be a useful, novel and nonobvious invention, counsel can reasonably expect that reduction to practice will occur constructively on the date the application is filed. His . . . decision is accordingly focused upon conception)

(emphasis in original); see also *Sewall v. Walters*, 21 F.3d 411, 415, 30 U.S.P.Q.2d (BNA) 1356, 1358 (Fed. Cir. 1994) (stating that "[d]etermining 'inventorship' is nothing more than determining who conceived the subject matter at issue").

⁸ An interference may occur between two pending applications or between a pending application and an issued, unexpired patent. The Patent and Trademark Office (PTO) will call for an interference when "an application is made for a patent which . . . would interfere with any pending application, or

interferences, this determination must be made in two situations: (1) when a claim of priority based on prior conception is made, or (2) during a determination of the correct inventive entity. In infringement actions, defendants often assert that the patent at issue is invalid due to an error in inventorship.

Conception has been identified as the “touchstone of inventorship,”⁹ yet courts have had difficulty enunciating a clear and precise test. Though the Patent Act was amended in 1984,¹⁰ these amendments were not directed to the conception requirement. Thus a review of cases both before and after the 1984 Amendments can be helpful in delineating a definition of conception.

B. CONCEPTION, AS DESCRIBED IN *MUELLER BRASS CO. V. READING INDUSTRIES, INC.* AND IN *BURROUGHSWELLCOME CO. V. BARR LABORATORIES, INC.*

In *Mueller Brass Co. v. Reading Industries, Inc.*,¹¹ the court discussed the conception requirement while defining joint inventorship:

To claim inventorship is to claim at least some role in the final conception of that which is sought to be patented. Perhaps one need not be able to point to a specific component as one’s sole idea, but one must be able to say that without his contribution to the final conception, it would have been less—less efficient, less simple, less economical, less something of benefit.¹²

Robert W. Harris has criticized the “Mueller Brass test” as inaccurately supporting the proposition that a general contribution to the conception of

with any unexpired patent . . .” 35 U.S.C. § 135(a) (1994). An examiner may declare an interference or an applicant may initiate one (upon discovery of a newly-issued United States or foreign patent that claims the same invention). See *ADELMAN ET AL.*, PATENT LAW 322 (1998).

⁹ *Burroughs Wellcome Co. v. Barr Lab., Inc.*, 40 F.3d 1223, 1227, 32 U.S.P.Q.2d (BNA) 1915, 1919 (Fed. Cir. 1994).

¹⁰ See *infra* Part III (discussing the 1984 Amendments and how they affect joint inventorship determinations).

¹¹ *Mueller Brass Co. v. Reading Indus., Inc.*, 352 F. Supp. 1357, 176 U.S.P.Q. (BNA) 361 (E.D. Pa. 1972) *aff’d* 487 F.2d 1395, 180 U.S.P.Q. (BNA) 547 (3d Cir. 1973).

¹² *Id.* at 1372.

the invention is required.¹³ In his analysis of the conception requirement, Harris stated that courts look for “conceptual specificity” in inventorship determinations.¹⁴ Harris concluded that “the more specific the conception of a putative inventor or co-inventor, in terms of structural details or details of process steps, the more likely such a person is an inventor or co-inventor, *other things being equal*.”¹⁵ That is, if the standard of proof for conception were the same for the defendant and for the plaintiff, then one would find a requirement of conceptual specificity.¹⁶

The traditional test for whether a person has conceived of an invention is “[w]hether the inventor had an idea that was definite and permanent enough that one skilled in the art could understand the invention.”¹⁷ The parameters of this test can be better understood by looking at the application of it by the Court of Appeals for the Federal Circuit (Federal Circuit).¹⁸ In *Burroughs Wellcome Co.*, a pharmaceutical manufacturer brought a patent infringement action with respect to six patents relating to various methods of using azidothymidine (AZT) to treat individuals with human immunodeficiency virus (HIV).¹⁹ The Federal Circuit held that National Institute of Health (NIH) scientists were not co-inventors with respect to

¹³ Harris, *supra* note 7, at 319-20 (stating that this can be “misleading dicta” when you examine the specific holding and facts of the case).

¹⁴ *Id.* at 322. Harris closely analyzed the following cases: *Land v. Dreyer*, 155 F.2d 383, 69 U.S.P.Q. (BNA) 602 (C.C.P.A. 1946); *Polye v. Uhl*, 328 F.2d 893, 140 U.S.P.Q. (BNA) 584 (C.C.P.A. 1964); *Garrett Corp. v. United States*, 422 F.2d 874, 164 U.S.P.Q. (BNA) 521 (Ct. Cl. 1970); *Amax Fly Ash Corp. v. United States*, 514 F.2d 1041, 185 U.S.P.Q. (BNA) 437 (Ct. Cl. 1975); *Morgan v. Hirsch*, 728 F.2d 1449, 221 U.S.P.Q. (BNA) 193 (Fed. Cir. 1984).

¹⁵ Harris, *supra* note 7, at 333 (emphasis in original).

¹⁶ However, the standards are different. Once a patent issues, it is presumed to be valid. Thus, a defendant must produce clear and convincing evidence to prove that the inventorship is incorrect. This presumption exists because the PTO has the primary responsibility of “sift[ing] out unpatentable material.” *SAB Industri AB v. Bendix Corp.*, 199 U.S.P.Q. (BNA) 95, 102 (E.D. Va. 1978); see 35 U.S.C. § 282 (Supp. III. 1997) (stating that “[a] patent shall be presumed valid”).

¹⁷ *Burroughs Wellcome Co. v. Barr Lab., Inc.*, 40 F.3d 1223, 1228, 32 U.S.P.Q.2d (BNA) 1915, 1919 (Fed. Cir. 1994); see also *Sewall v. Walters*, 21 F.3d 411, 415, 30 U.S.P.Q.2d (BNA) 1356, 1359 (Fed. Cir. 1994) (“Conception is complete when one of ordinary skill in the art could construct the apparatus without unduly extensive research or experimentation.”); *Coleman v. Dines*, 754 F.2d 353, 359, 224 U.S.P.Q. (BNA) 857, 862 (Fed. Cir. 1985) (quoting *Mergenthaler v. Scudder*, 11 App. D.C. 264, 276 (App. D.C. 1897), which defined conception as “the complete performance of the mental part of the inventive act. It is . . . the formation, in the mind of the inventor of a definite and permanent idea of the complete and operative invention”) (emphasis omitted).

¹⁸ The Federal Circuit refers to the United States Court of Appeals for the Federal Circuit, which was created in 1982 to replace both the United States Court of Customs and Patent Appeals (C.C.P.A.) and the Court of Claims.

¹⁹ *Burroughs Wellcome Co.*, 40 F.3d at 1225, 32 U.S.P.Q.2d (BNA) at 1917.

inventions regarding compositions containing AZT and methods of using AZT to treat acquired immunodeficiency syndrome (AIDS).²⁰ However, the court held that the NIH scientists could be co-inventors of the subject matter in the patent pertaining to the use of AZT to increase the number of T-lymphocytes in humans infected with HIV.²¹

Based on the pharmaceutical manufacturer's request, the NIH scientists had performed tests which confirmed that AZT was effective against HIV. In this case, the date of conception of the invention became a significant issue: had the Burroughs Wellcome Co. inventors conceived of the invention *before* they asked the NIH scientists to perform tests?²² The Federal Circuit held that conception required the inventor "to describe his invention with particularity."²³ This requirement ensured that the inventor possessed a "complete mental picture of the invention."²⁴ The court distinguished conception from reduction to practice. It stated that the conception requirement *does not include knowledge that the invention will work*; such knowledge is part of the reduction to practice.²⁵ In reaching its decision, the court noted that the Burroughs Wellcome Co. (Burroughs Wellcome) inventors had thought of the particular antiviral agent with which they intended to treat AIDS before the NIH scientists confirmed AZT was active against HIV. Thus, the court found that with respect to the five patents drawn to the compositions containing AZT and methods of using AZT to treat AIDS, the Burroughs Wellcome scientists had conceived of the full invention.²⁶

C. REQUIREMENT OF CORROBORATION

Because conception is purely a mental activity, courts have routinely required corroborating evidence to support an allegation of conception.²⁷

²⁰ *Id.* at 1231.

²¹ *Id.* at 1232.

²² *Id.* at 1228.

²³ *Id.*

²⁴ *Burroughs Wellcome Co. v. Barr Lab., Inc.*, 40 F.3d 1223, 1228, 32 U.S.P.Q.2d (BNA) 1915, 1919 (Fed. Cir. 1994).

²⁵ *Id.* at 1228.

²⁶ *Id.* at 1230.

²⁷ *See id.* at 1228 (citing *Coleman v. Dines*, 754 F.2d 353, 359, 224 U.S.P.Q. (BNA) 857, 862 (Fed. Cir. 1985), to state that because conception is "a mental act, courts require corroborating evidence of a contemporaneous disclosure that would enable one skilled in the art to make the invention").

This is a well-established requirement. In *Mergenthaler v. Scudder*, the court explained the corroboration requirement as follows:

[c]onception by an inventor . . . can not [sic] be proved by his mere allegation nor by his unsupported testimony, where there has been no disclosure to others or embodiment of the invention in some clearly perceptible form, such as drawings or model . . . For otherwise[,] such facile means of establishing priority of invention would, in many cases, offer great temptation to perjury, and would have the effect of virtually precluding the adverse party from the possibility of rebutting such evidence.²⁸

Though *Mergenthaler* establishes that some amount of corroboration is required, it does not provide much direction for determining the necessary amount or type of corroborating evidence that is needed to support a claim of correct or incorrect inventorship.

1. *Sufficient Corroboration.* The amount and type of corroboration needed to support a claim of inventorship can be determined by examining a few case holdings. In *Burroughs Wellcome Co.*, the court emphasized the importance of supporting the “alleged conception” through the use of corroborating evidence.²⁹ There, the court found the draft of a patent application to be sufficient corroborating evidence of the named Burroughs Wellcome inventors’ definite and complete conception of the invention.³⁰

By contrast, in a defendant’s claim of non-joinder, a memorandum was insufficient evidence of conception. In *Garrett Corp. v. United States*, the patent at issue related to a boarding ramp which could be used to board a

²⁸ *Mergenthaler v. Scudder*, 11 App. D.C. 264, 278 (App. D.C. 1897).

²⁹ *Burroughs Wellcome Co. v. Barr Lab., Inc.*, 40 F.3d 1223, 1230, 32 U.S.P.Q.2d (BNA) 1915, 1921 (Fed. Cir. 1994) (stating “of course, the alleged conception must be supported by corroborating evidence”) (emphasis added).

³⁰ See *id.* (noting that the draft disclosed in detail the use of AZT to treat AIDS: it set out the compound’s structure, how to use AZT to treat a patient with HIV, dosages, dose forms, and routes of administration).

portable life raft.³¹ The defendant claimed that a second inventor had contributed to claim 3, which related to placing access ports in the water ballast pocket above the normal water line.³² To support his inventorship claim, the defendant offered a memorandum in which the 'sole' inventor had stated that his co-worker had suggested the idea of using the water ballast pocket in conjunction with the boarding ramp.³³ This broad idea was found to be obvious in light of the prior art.³⁴ The Court of Claims³⁵ found that although the co-worker had "suggested the broad idea of a water ballast pocket for use in conjunction with a boarding ramp,"³⁶ he had not contributed to the more "refined" details of the invention, i.e., locating the water ballast pocket above the water line; thus, he was not a co-inventor. Further, the court noted that the co-worker could not recall making the suggestion. Therefore, even had the court found the co-worker to be a joint inventor, he could not have made an oath as to joint inventorship, as required by 35 U.S.C. § 256, to correct the inventorship.³⁷

In cases in which the court has upheld the inventorship as proper, corroborating evidence that generally defines the claimed invention has sufficed. By contrast, to prove non-joinder or misjoinder, as discussed above, proof that more specifically defines the invention is required. The lower standard of proof for upholding the named inventor is based on the presumption that inventorship as stated in the patent is correct. Further, in the context of an infringement action, when the defense of non-joinder or misjoinder is used, courts generally look upon the defense with disfavor because it is a "technical" defense; thus, the courts require clear and

³¹ Garrett Corp. v. United States, 422 F.2d 874, 876-77, 164 U.S.P.Q. (BNA) 521, 523-24 (Ct. Cl. 1970) (describing the Walker patent boarding ramp).

³² *Id.* at 879. Water ballast pockets were traditionally placed on each side of life rafts below the normal water level of the raft. These pockets would fill with water immediately when the raft was put afloat and remain filled as long as the raft was in an upright position. These pockets stabilized the raft by minimizing drift and by resisting overturn. By contrast, in claim 3, the water ballast pockets were placed on the boarding ramp above the normal water line. Thus, when these pockets filled with water, the ramp end was lowered and filled. Some of the water in the pocket remained above the ramp water line, thereby adding weight, and thus stability, to the raft.

³³ *Id.* at 880.

³⁴ *Id.* at 881.

³⁵ The Court of Claims is the predecessor to the Federal Circuit. See *supra* note 18 (discussing the creation of the Federal Circuit).

³⁶ Garrett Corp. v. United States, 422 F.2d 874, 881, 164 U.S.P.Q. (BNA) 521, 527 (Ct. Cl. 1970).

³⁷ *Id.* at 881 n.5. See *infra* Part V (discussing Correction of Inventorship Errors).

convincing proof to sustain such a defense.³⁸ An example of the application of the lower standard of proof can be found in *Mueller Brass Co. v. Reading Industries, Inc.*³⁹ There the court found that an individual's general discussion of a method with another inventor, along with the presence of the individual's name on the patent, was sufficient corroborating evidence of proper joinder of inventors.⁴⁰ The court noted that traditionally "courts have been reluctant to strike down patents for non-joinder on challenges by third party infringers."⁴¹

D. WHAT DOES NOT MEET THE CONCEPTION REQUIREMENT

Though a precise test for conception has not been clearly defined by the courts, some courts have identified factors which do not contribute to a determination that conception of the invention had occurred. Four factors that do not contribute to a finding of conception are (1) "mere suggestions," (2) "employee improvement," (3) belief that the invention will work, and (4) knowledge of the result to be obtained.

The doctrine of "mere suggestions" denies co-inventorship status to a person who casually suggests an improvement to an invention but who does not work to fit it into the invention.⁴² This doctrine appears to reward the individual who labors to create the final, complete invention. Under the doctrine of "employee improvement," an employee engaged in experiments to perfect another's experiments is not a co-inventor "unless the improvement is so significant as to amount to 'a complete invention' in and of itself."⁴³ This doctrine has only been applied to save patents which are

³⁸ *Mueller Brass Co. v. Reading Indus., Inc.*, 352 F. Supp. 1357, 1372, 176 U.S.P.Q. (BNA) 361, 372 (E.D. Pa. 1972).

³⁹ 352 F. Supp. 1357, 176 U.S.P.Q. (BNA) 361 (E.D. Pa. 1972).

⁴⁰ *Id.* at 1374 (stating that because Feuslein was listed on the patent as a co-inventor, even though the court could find no corroborating evidence that he had conceived of the invention, he was considered to be a joint inventor of the method. The court explained that its finding of proper joinder was based on the high standard for proving misjoinder. It stated that "the Court would have little trouble finding Feuslein not to be an inventor of the method" if the standard of proof, i.e., clear and convincing evidence, were not so high).

⁴¹ *Id.* at 1372-73.

⁴² *Id.* at 1373.

⁴³ *Mueller Brass Co. v. Reading Indus., Inc.*, 352 F. Supp. 1357, 1373, 176 U.S.P.Q. (BNA) 361, 372 (E.D. Pa. 1972) (citing *Agawam Woolen Co. v. Jordan*, 74 U.S. (7 Wall.) 583, 603 (1869)).

attacked for non-joinder and has not been applied to defeat a patent for misjoinder.⁴⁴

The Federal Circuit stated that the test for conception does not require that an inventor believe that his invention will work.⁴⁵ Thus, in *Burroughs Wellcome Co.*, the court rejected the defendant's argument that the Burroughs Wellcome scientists had not conceived of the invention prior to learning the test results from the NIH scientists because the Burroughs Wellcome scientists had not known that AZT was *in fact* active against HIV until then.⁴⁶

The Federal Circuit's predecessor, the Court of Customs and Patent Appeals (C.C.P.A.), held that merely conceiving of the "result to be obtained" does not meet the requirement of conception.⁴⁷ *Land v. Dreyer* arose as an interference proceeding over an invention for an incandescent lamp with a coating made of a light-polarizing material and a filament light source.⁴⁸ The interference concerned a determination of priority, and thus the court determined when each party had conceived of the invention.

Land appealed the Board of Interference Examiners of the United States Patent and Trademark Office's (PTO) award of priority to Dreyer. The dispositive issue was whether Land had conceived of certain aspects of the invention prior to the July 2, 1938 filing date of Dreyer's patent application.⁴⁹ The court noted that since 1929 Land had been thinking about the idea that "it would be desirable to apply a polarizing material directly onto an incandescent lamp."⁵⁰ However, because he could not prove that he had found a polarizing material for the lamp prior to Dreyer's filing date, his conception was not "complete and operative"; therefore Land was not the inventor.⁵¹

⁴⁴ *Mueller Brass Co.*, 352 F. Supp. at 1374, 176 U.S.P.Q. (BNA) at 373-74. This fact further demonstrates the effect of the different standards of proof for the plaintiff and defendant in infringement actions. See *supra* Part II.C for examples.

⁴⁵ *Burroughs Wellcome Co. v. Barr Lab., Inc.*, 40 F.3d 1223, 1228, 32 U.S.P.Q.2d (BNA) 1915, 1920-21 (Fed. Cir. 1994) (citing *MacMillan v. Moffett*, 432 F.2d 1237, 1239, 167 U.S.P.Q. (BNA) 550, 552 (C.C.P.A. 1970)).

⁴⁶ *Burroughs Wellcome Co.*, 40 F.3d at 1227, 32 U.S.P.Q.2d (BNA) at 1920-21.

⁴⁷ *Land v. Dreyer*, 155 F.2d 383, 387, 69 U.S.P.Q. (BNA) 602, 605 (C.C.P.A. 1946).

⁴⁸ *Id.*

⁴⁹ *Id.* at 384.

⁵⁰ *Id.* at 387.

⁵¹ Cf. *Harris*, *supra* note 7, at 322-24 (discussing *Land v. Dreyer* and noting that it appears that Land's conception was sufficiently complete to have been awarded priority because the court noted that it was accepted that Land "had in mind a filament light source encompassed within a non-planar envelope or that

E. DOCTRINE OF SIMULTANEOUS CONCEPTION AND REDUCTION TO PRACTICE

The doctrine of simultaneous conception and reduction to practice has been applied in cases concerning inventions of new biotherapeutic gene sequences.⁵² This doctrine stands for the idea that separating conception from reduction to practice is impossible when an inventor must perform experiments before confirming that the idea results in a successful invention.

Though this doctrine initially appeared as a separate standard for conception,⁵³ the Federal Circuit has clarified it and established that only one standard for conception exists. In *Burroughs Wellcome Co.*, the Federal Circuit explained that the doctrine of simultaneous conception and reduction to practice merely applies when the inventor cannot show conception until a successful reduction to practice has occurred, recognizing that the conception is incomplete until that point.⁵⁴ Prior to this ruling it appeared that in the unpredictable arts, such as chemistry and biology, this doctrine would apply, while in the predictable arts, such as mechanical inventions, only conception was required. Here the court explained that the existence of this doctrine is not due to the unpredictable nature of a given field.⁵⁵ Thus, the requirement of conception along with corroborating evidence of the conception is the only test for inventorship.

he visualized a coating of a polarizer on the non-planar surface." Harris further noted that the interference was not concerned with the precise polarizing material used, though the court based its determination that Land was not an inventor on the fact that he had not conceived of the material before Dreyer's filing date.

⁵² See *Fiers v. Revel*, 984 F.2d 1164, 1169, 25 U.S.P.Q.2d (BNA) 1601, 1604 (Fed. Cir. 1993) (stating that an inventor does not complete conception of a biologically active gene sequence until the completion of successful reduction to practice); *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1206, 18 U.S.P.Q.2d (BNA) 1016, 1021 (Fed. Cir. 1991) (holding that conception does not result when an inventor merely describes an invention by its primary biological property, but that "when an inventor is unable to envision the detailed constitution of a gene so as to distinguish it from other materials, as well as a method for obtaining it, conception has not been achieved until reduction to practice has occurred").

⁵³ See *Smith v. Bousquet*, 111 F.2d 157, 159, 45 U.S.P.Q. (BNA) 347, 349 (C.C.P.A. 1940) (stating that in experimental fields, such as biology and chemistry, conception and reduction to practice are inseparable).

⁵⁴ *Burroughs Wellcome Co. v. Barr Lab., Inc.*, 40 F.3d 1223, 1229, 32 U.S.P.Q.2d (BNA) 1915, 1920 (Fed. Cir. 1994) (explaining that in such cases the reduction to practice is the only evidence to corroborate conception of the invention).

⁵⁵ *Id.* at 1229.

F. DEFINITION OF CONCEPTION

Conception is traditionally defined according to the “Mergenthaler standard” enunciated in 1897. In *Mergenthaler v. Scudder*, conception was defined as follows:

[t]he conception of the invention consists in the complete performance of the mental part of the inventive act. All that remains to be accomplished, in order to perfect the act or instrument belongs to the department of construction, not invention. It is therefore the formation, in the mind of the inventor, of a definite and permanent idea of the complete and operative invention, as it is thereafter to be applied in practice that constitutes an available conception, within the meaning of the patent law.⁵⁶

In *Land v. Dreyer*, the C.C.P.A. modified this standard to distinguish conception from reduction to practice. It stated that conception must be “complete and operative and such as would enable a person skilled in the art to reduce the conception to practice without any further research or exercise of the inventive skill.”⁵⁷

Because conception is a mental practice, corroboration is required to prove that it occurred. However, different burdens of proof exist with respect to upholding the inventorship entity in an issued patent and challenging that inventorship entity. An issued patent is presumed to be correct. Thus, misjoinder and non-joinder must be proved by clear and convincing evidence. Further, non-joinder is traditionally looked down upon by the courts as a technical defense asserted by alleged infringers. Therefore, stronger corroborating evidence is needed to prove that the stated inventorship entity is incorrect than is required to uphold it.

In cases in which corroboration demonstrated that the alleged inventor had contributed to the specific details of the invention, courts found that this individual was a true inventor. However, when the corroboration merely

⁵⁶ *Mergenthaler v. Scudder*, 11 App. D.C. 264, 276 (App. D.C. 1897).

⁵⁷ *Land v. Dreyer*, 155 F.2d 383, 387, 69 U.S.P.Q. (BNA) 602, 605 (C.C.P.A. 1946).

supported the notion that the individual had contributed to the general concept of the invention, the court found that he was not an inventor because he had not contributed to the complete and operative invention.

Though a general requirement for conception existed, questions still arose in making determinations of joint inventorship. The Patent Act was amended in 1984 to help establish guidelines for such determinations. Part III of this Note will describe the effect of the 1984 Amendments in determinations of joint inventorship.

III. 1984 AMENDMENTS

In 1984 Congress attempted to clarify the joint inventorship requirements and amended the Patent Act to codify prior case law.⁵⁸ Prior to the 1984 Amendments, the 1952 Patent Act had failed to define the circumstances under which joint inventorship existed,⁵⁹ and therefore different courts had articulated different standards. Two conflicting standards were the “all claims” rule and the “non-all claims” rule. Failure by the courts to agree upon a uniform standard for joint inventorship necessitated Congressional action. Examples of the disagreement among the courts prior to the 1984 Amendments follows.

A. THE “ALL CLAIMS” RULE

The “all claims” rule required each inventor to contribute to every claim in the patent.⁶⁰ This standard for inventorship reflected the ownership rights granted to each inventor. Each inventor is a co-tenant with respect to the patent rights,⁶¹ and by requiring each inventor to contribute to every claim,

⁵⁸ 35 U.S.C. § 116 (1994) (amendment found at Pub. L. No. 98-622 (1984)).

⁵⁹ See 35 U.S.C. § 116 (1982) (reciting the joint inventorship rules prior to the 1984 Amendments). Prior to the 1984 Amendments, section 116 acknowledged that joint inventorship exists and provided procedures for jointly applying for a patent and for correcting inventorship.

⁶⁰ See *Rival Mfg. Co. v. Dazey Prod. Co.*, 358 F. Supp. 91, 101, 177 U.S.P.Q. (BNA) 432, 439 (W.D. Mo. 1973) (“[I]ndependent mechanical features that are . . . separate claims in a patent, although incorporated in a single machine, remain separate and distinct inventions.”); *Stewart v. Tenk*, 32 F. 665 (C.C.S.D. Ill. 1887) (holding that because the inventors had not co-invented the claim at issue they were not joint inventors and a separate patent should have been issued to the sole inventor of that claim); *Ex parte Martin*, 215 U.S.P.Q. (BNA) 543, 544 (P.T.O.B. App. 1981) (reciting that joint inventorship requires “that every claim of an application be a product of the same inventive entity”).

⁶¹ 35 U.S.C. § 262 (1994); see *infra* Part VI (discussing Patent Co-tenancy and Economics).

the “all claims” rule ensured that each inventor deserved a co-equal right in the patent. However, this standard had a significant drawback. To receive patent rights to a complete device or process, the “all claims” rule often required that multiple patent applications be prosecuted when there were multiple inventors. In *In re Sarett*, the court noted that “[t]his rule of law forces the filing of distinct applications [when there are different inventors for different claims] and creates the complexities and delays which could be avoided under a less rigid statute.”⁶²

B. THE “NON-ALL CLAIMS” RULE

In contrast to the rigidity of the “all claims” rule, some courts enunciated the more flexible “non-all claims” rule. This standard allowed for joint inventorship when different inventors had contributed to different claims, as long as they met the other requirements of inventorship⁶³ and their contributions resulted in one invention. In *SAB Industri AB v. Bendix Corp.* the court commented on the validity of the “all claims” rule, stating that “[n]either the statute nor any rule of the Patent Office . . . cited to the Court provides such a restrictive meaning of the term ‘joint.’”⁶⁴ This case involved a patent infringement action regarding patents covering automatic slack adjusters for vehicle brakes.⁶⁵ The plaintiff alleged that the defendant had infringed its patent. Two of the defendant’s defenses were that (1) there was no infringement and (2) the patent was invalid for improper inventorship.⁶⁶ The court found for the defendant, finding the defendant had not infringed the plaintiff’s patent.⁶⁷

⁶² *In re Sarett*, 327 F.2d 1005, 1010 n.7, 140 U.S.P.Q. (BNA) 474, 479 n.7 (C.C.P.A. 1964).

⁶³ See *supra* Part II (defining inventorship as requiring conception and reduction to practice); see also *infra* Part IV (discussing the collaboration requirement for joint inventorship).

⁶⁴ *SAB Industri AB v. Bendix Corp.*, 199 U.S.P.Q. (BNA) 95, 104 (E.D. Va. 1978). The court distinguished that case from *Rival Mfg. Co.*, 358 F. Supp. 91, 177 U.S.P.Q. (BNA) 432, by noting that *Rival Mfg. Co.* involved a lack of collaboration between the alleged joint inventors because the inventors “had developed their features of the invention separately, at different times and places without active communication between them upon the same subject.” *SAB Industri AB*, 199 U.S.P.Q. (BNA) at 104 (describing *Rival Mfg. Co.*, 358 F. Supp. at 101, 177 U.S.P.Q. (BNA) at 439-40).

⁶⁵ *SAB Industri AB*, 199 U.S.P.Q. (BNA) at 95.

⁶⁶ *Id.* at 100-02.

⁶⁷ *Id.* at 107.

In analyzing the claim of incorrect inventorship, the court assumed that the defendant's argument for using the "all claims" rule was correct.⁶⁸ However, even with that restrictive rule, the court found that the inventorship was properly corrected (if it had been incorrectly stated initially) because there was no deceptive intent when the oaths of inventorship were made.⁶⁹

In this case, the patent application had claimed joint inventorship. Because the examiner determined that more than one invention was claimed in the application, some of the claims were canceled and then claimed in a divisional application.⁷⁰ As a result, a new oath as to inventorship was made. This oath stated that, for the purposes of the divisional application, only one inventor had conceived of the subject matter.⁷¹ Because the court found that both the first and the second oaths as to inventorship were truthfully made with no intent to deceive the PTO, the inventorship was upheld.⁷²

The court in *Vekamaf Holland B.V. v. Pepe Benders, Inc.*⁷³ found that the "non-all claims" rule allows joint inventorship for patents "even if all of the joint inventors did not contribute to each and every one of the claims."⁷⁴ The patent at issue concerned a technological improvement to a method for custom bending industrial pipe and other elongated objects.⁷⁵ The court found that the "inventive principle generic to all of the claims allows for deviation in the bending radius during the bending operation, a detection of those deviations, and correction thereof by a longitudinal movement of the heating means."⁷⁶ Though only one inventor had invented one of the

⁶⁸ *Id.* at 104.

⁶⁹ *SAB Industri AB v. Bendix Corp.*, 199 U.S.P.Q. (BNA) 95, 105 (E.D. Va. 1978); *see infra* note 94 and accompanying text (quoting the statute for correction of inventorship).

⁷⁰ A divisional application results when two or more independent and distinct inventions are claimed in one application. Then, "the Commissioner may require the application to be restricted to one of the inventions. If the other invention is made the subject of a divisional application which complies with the requirements of" 35 U.S.C. § 120 (Supp. 1998), it is entitled to the filing date of the original application. 35 U.S.C. § 121 (Supp. 1998).

⁷¹ *SAB Industri AB*, 199 U.S.P.Q. (BNA) at 104 ("Upon thus realizing that there were in fact two inventions and a decision was made to proceed with the preparation of the divisional application, it was noted that [the subject matter claimed in the divisional application] was in reality the work of only one of us . . ."). *Id.*

⁷² *Id.* at 105.

⁷³ 211 U.S.P.Q. (BNA) 955 (D. Minn. 1981).

⁷⁴ *Vekamaf Holland B.V. v. Pepe Benders, Inc.*, 211 U.S.P.Q. (BNA) 955, 966 (D. Minn. 1981) (citing *SAB Industri AB v. Bendix Corp.*, 199 U.S.P.Q. (BNA) 95, 105 (E.D. Va. 1978) for support).

⁷⁵ *Vekamaf Holland B.V.*, 211 U.S.P.Q. (BNA) at 960.

⁷⁶ *Id.* at 966.

methods claimed in the patent, a second inventor had worked with the first to conceive of a second method, which was also claimed in the patent; the court held that the inventors were properly joined because both of these methods were part of the “generic inventive principle” of the invention at issue.⁷⁷ Because both patentees made some original contribution to the entire inventive concept, they were properly joined in one patent.⁷⁸

The court in *Monsanto Co. v. Kamp*⁷⁹ defined joint inventorship in accordance with the “non-all claims” rule as well.⁸⁰ There the court upheld the Board of Patent Interference’s determination that the defendant had priority to patent plastic pharmaceutical bottles lined with polyethylene.⁸¹ In reaching this decision, the court enunciated the following definition of joint inventorship:

[a] joint invention is the product of collaboration of the inventive endeavors of two or more persons working toward the same end and producing an invention by their aggregate efforts. . . . Each [inventor] needs to perform but a part of the task if an invention emerges from all of the steps taken together. It is not necessary that the entire inventive concept should occur to each of the joint inventors, or that the two should physically work on the project together. . . . [It is a joint invention] if each makes some original contribution, though partial, to the final solution of the problem.⁸²

In upholding the joint inventorship claimed in the defendant’s patent, the court noted that each of the named inventors performed experimental work in a separate laboratory. Further, the court noted that “[t]he two co-workers were in frequent consultation with each other concerning various aspects of the project. . . [and t]here was an interchange of ideas between the two, until

⁷⁷ *Id.*

⁷⁸ *Id.*

⁷⁹ 269 F. Supp. 818, 154 U.S.P.Q. (BNA) 259 (D.D.C. 1967).

⁸⁰ *Monsanto Co. v. Kamp*, 269 F. Supp. 818, 824, 154 U.S.P.Q. (BNA) 259, 262 (D.D.C. 1967).

⁸¹ *Monsanto Co.*, 269 F. Supp. 818, 154 U.S.P.Q. (BNA) 259.

⁸² *Id.* at 824.

finally a consummation was reached.”⁸³ Although each inventor had worked separately in a physical sense, the inventors had collaborated through consultations with each other to reach the final, complete invention.

These three cases depict the “non-all claims” rule as providing for joint inventorship when, while working towards the completion of a common, nonobvious, and novel subject matter, (1) the inventors have not physically worked together to produce the subject matter of the invention, (2) each inventor has contributed a different quantity of work effort towards the common subject matter, or (3) each inventor has not contributed to every claim.⁸⁴

C. ADVANTAGES TO THE “NON-ALL CLAIMS” RULE

The primary advantage to the “non-all claims” rule is that it expedites patent prosecution for a given device or process. Under this standard, only one patent must be filed for the disclosure of a complete inventive subject matter. Additionally, this standard provides a greater likelihood than the “all claims” rule does that once a patent issues, complete rights to market the invention reside with the joint inventors or their assignees.

The “non-all claims” rule supports the efforts of team research. In passing the 1984 Amendments, Rep. Kastenmeier stated that the purpose of the amendments to section 116 was to “recognize[] the realities of modern team research.”⁸⁵ During the Congressional hearings, Gerald J. Mossinghoff, then Commissioner of Patents and Trademarks, testified as follows:

[s]cientists or researchers in an organization often work on a particular aspect or embodiment of the invention, or on only a portion of the invention, while others work on different aspects, embodiments or portions. Scientists are continually added to a research team, while other scientists leave the team.

⁸³ *Id.* at 825.

⁸⁴ See *infra* note 90 and accompanying text (discussing the legislative history of the 1984 Amendments).

⁸⁵ *Section-by-Section Analysis of H.R. 6286, Pat. Law Amendments Act of 1984*, 130 CONG. REC. 28069, 28071 (1984) [hereinafter *Section Analysis*].

Concepts and development plans generated through brainstorming cannot always be accurately attributed.

....

Adequate protection for an invention may require the filing of several applications to cover the separate contributions to all of its aspects [under an “all claims” rule].⁸⁶

Thus, the “non-all claims” rule supports team research endeavors because it allows for joinder of individuals who contributed to an invention, regardless of whether they contributed to every claim. Further, it simplifies the work of the patent council because only one application needs to be filed and prosecuted for each invention and documentation regarding which inventor contributed to which claim is unnecessary.

D. 1984 AMENDMENTS: CODIFICATION OF THE “NON-ALL CLAIMS” RULE

The 1984 Amendments resolved the joint inventorship debate by codifying the “non-all claims” rule. Section 116 of the Patent Act, as amended, states:

[w]hen an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided in this title. Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.⁸⁷

⁸⁶ *Hearings on H.R. 3285, H.R. 3286, and H.R. 3605 Before Subcomm. on Courts, Civil Liberties and the Administration of Justice of the House Comm. on the Judiciary, 98th Cong. 61-28 (1984) (written statement of Mossinghoff).*

⁸⁷ 35 U.S.C. § 116 (1994). Items (1) and (2) codify the rationale of *Monsanto Co. v. Kamp*, 269 F. Supp. 818, 154 U.S.P.Q. (BNA) 259 (D.D.C. 1967), while item (3) codifies that of *SAB Industri AB v. Bendix Corp.*, 199 U.S.P.Q. (BNA) 95 (E.D. Va. 1978).

The legislative history for this section clarifies some aspects of the amendment, but it leaves other aspects open to be defined by the courts or by future legislation. Representative Kastenmeier summarized this section, stating that it “provides that two or more inventors may obtain a patent jointly even though each inventor has not contributed to each and every claim found in the patent application.”⁸⁸ Further, the legislative history makes clear that items (1) and (2) follow the rationale of *Monsanto Co.*, while item (3) follows the rationale of cases such as *SAB Industri AB*.⁸⁹ However, the amendments do not state the precise criteria for a determination of joint inventorship;⁹⁰ thus, confusion in determinations of joint inventorship by inventors and employers often results.

E. JOINT INVENTORSHIP IS NOT CLEARLY DEFINED

Prior to the 1984 Amendments, courts had difficulty in defining joint inventorship. One court explained that “[t]he exact parameters of what constitutes joint inventorship are quite difficult to define. It is one of the muddiest concepts in the muddy metaphysics of the patent law.”⁹¹ Though section 116 explicitly requires joint inventors to apply for a patent together, it never defines the term “joint inventors.” The list of situations which *may* result in joint inventorship is not comprehensive. By merely stating that joint inventorship is not precluded in the listed situations, and by not defining facts which contribute to a determination of joint inventorship, courts are forced to examine the facts of each case to determine whether the conception requirement has been met by the inventorship entity. Further, whether collaboration is still required for a determination of joint

⁸⁸ Section Analysis, *supra* note 85, at 28073.

⁸⁹ *Id.* at 28071.

⁹⁰ See *Hearing on S. 1535 and S. 1841 Before the Subcomm. on Patents, Copyrights and Trademarks of the Senate Comm. on the Judiciary*, 98th Cong. 31-67, 69 (1984) (quoting Bernerarr Pravel, President of AIPLA, as stating that “[t]he amendments to Section 116 of Title 35 should have a twofold purpose: (1) to permit inventors to be joined in a single patent application, even though they may not have contributed to every claim in the application, and (2) to clarify the criteria for joint inventorship”) [hereinafter *Senate Hearings*].

⁹¹ *Mueller Brass Co. v. Reading Indus. Inc.*, 352 F. Supp. 1357, 1372, 176 U.S.P.Q. (BNA) 361, 372 (E.D. Pa. 1972). The difficulty in defining joint inventorship is due in part to the nebulous definition of conception, which is a crucial element in the definition of inventor. Further, it is often difficult to determine what the “complete and operative invention” is. Thus, determinations of inventorship, in general, can be “muddy.”

inventorship is not discussed in the 1984 Amendments. The requirement that joint inventors collaborate in forming the final, complete inventive concept is discussed in Part IV.

IV. COLLABORATION REQUIREMENT FOR JOINT INVENTORSHIP

Joint inventorship has traditionally required collaboration between joint inventors. A quick reading of section 116 could result in the belief that collaboration is no longer required. However, a more careful analysis of the wording of the amendment, its legislative history, and the cases since the 1984 Amendment indicate that the collaboration requirement remains.

A. TRADITIONAL REQUIREMENT

Pre-1984 Amendment cases recited the collaboration requirement as follows: “[j]oint invention connotes collaboration of effort to produce a complete and operative invention.”⁹² *Monsanto Co.* elaborated on the collaboration requirement by stating specific circumstances in which joint inventorship is not precluded.⁹³ There, the court explained that the inventors must work together, though they need not be physically together, to produce the invention.

The structure of section 116 demonstrates Congressional intent to retain the collaboration requirement: section 116, as amended, contains the same first sentence as had been used prior to the 1984 Amendments.⁹⁴ Prior to 1984, it was well-established in case law that collaboration between joint inventors was required. Because the amendments to the statute do not explicitly change this requirement, it appears that Congress intended to retain the collaboration requirement.

⁹² *Garrett Corp. v. United States*, 422 F.2d 874, 881, 164 U.S.P.Q. (BNA) 521, 526 (Ct. Cl. 1970).

⁹³ See *supra* note 82 and accompanying text (quoting *Monsanto Co.*'s “non-all claims” rule).

⁹⁴ 35 U.S.C. § 116 (1994). This section begins by stating “[w]hen an invention is made by two or more persons jointly, they shall apply for patent jointly and each make the required oath, except as otherwise provided in this title”; cf. 35 U.S.C. § 116 (1982) (beginning with a similar statement, “[w]hen an invention is made by two or more persons jointly, they shall apply for patent jointly and each sign the application and make the required oath, except as otherwise provided in this title”) (emphasis added to show the similarity between the wording used in pre-1984 and post-1984 § 116).

Section 116 specifically recites three situations in which joint inventorship is not precluded.⁹⁵ By stating that joint inventorship may exist even when the inventors “did not physically work together or at the same time,” Congress implied that the traditional rule requiring collaboration remained. If Congress had intended to remove the collaboration requirement, it would not have discussed the particular situation in which inventors do not physically work together. Such a circumstance would have been implied based on the general understanding that collaboration was unnecessary. Thus, because Congress explicitly stated that such a circumstance does not preclude a determination of joint inventorship, Congress has more clearly defined the collaboration requirement.⁹⁶

An analysis of the legislative history further demonstrates Congressional intent to retain the requirement of collaboration. The legislative history states that Congress was codifying the rationales of decisions like *Monsanto Co.* and *SAB Industri AB*.⁹⁷ These decisions required collaboration for joint inventorship; in fact, *Monsanto Co.* defined joint inventorship as including collaboration.⁹⁸ Further, the legislative history recites that a significant purpose of the 1984 Amendments was to recognize the realities of modern team research, i.e., where different people collaborate to produce the invention.⁹⁹

The requirement of collaboration for a determination of joint inventorship has been enforced by other courts as well. The Federal Circuit, in a determination that there was no joint inventorship when the inventors are “totally independent of each other[,]”¹⁰⁰ analyzed the statutory construction of section 116 and found that it required collaboration:

⁹⁵ See *supra* note 87 and accompanying text (reciting the entire first paragraph of 35 U.S.C. § 116 (1984)).

⁹⁶ See *Kimberly-Clark Corp. v. Procter & Gamble Distrib. Co.*, 973 F.2d 911, 916, 23 U.S.P.Q.2d (BNA) 1921, 1925 (Fed. Cir. 1992) (examining whether the traditional collaboration requirement still exists in light of the 1984 Amendments).

⁹⁷ Section Analysis, *supra* note 85, at 28071.

⁹⁸ See *supra* note 82 and accompanying text (quoting definition of joint inventorship found in *Monsanto Co. v. Kamp*, 269 F. Supp. 818, 154 U.S.P.Q. (BNA) 259 (D.D.C. 1967)).

⁹⁹ Section Analysis, *supra* note 85, at 28071. With respect to another section of the bill, Rep. Kastenmeier emphasized the importance of team research by stating that “[this amendment] changes a complex body of case law which discourages communication among members of research teams working in corporations, universities or other organizations . . . The bill . . . will encourage communication among members of research teams, and patenting, and consequently public dissemination, of the results of ‘team research.’” *Id.*

¹⁰⁰ *Kimberly-Clark Corp.*, 973 F.2d at 917, 23 U.S.P.Q.2d (BNA) at 1926.

[w]hat is clear is that the statutory word “jointly” is not mere surplusage. For persons to be joint inventors under Section 116, there must be some element of joint behavior, such as collaboration or working under common direction, one inventor seeing a relevant report and building upon it or hearing another’s suggestion at a meeting.¹⁰¹

In 1993, the District Court for the Southern District of California stated that “[j]oint invention connotes collaboration of effort to produce a complete and operative invention.”¹⁰² The court cited a pre-1984 Amendment Court of Claims case as the authority for this view. By analyzing the structure of the statute and expressly adopting past cases as authority, the courts demonstrate that collaboration is still a requirement for joint inventorship.

Though Congress has clarified the standards for joint inventorship, mistakes are often made in determining the true inventors; legislators have recognized this problem and have amended the Patent Act to allow for correction of inventorship in most situations. The correction of inventorship errors in patent applications and issued patents will be examined in Part V.

V. CORRECTION OF INVENTORSHIP ERRORS

In 1982 and 1984 the Patent Act was amended to facilitate a patent entity’s ability to correct inventorship.¹⁰³ Prior to the 1952 Patent Act, a patentee had a limited opportunity to correct inventorship without losing his patent rights.¹⁰⁴ This problem had been addressed in subsequent amendments, yet limitations still existed. For instance, a complete mistake with respect to ownership (i.e., where no proper inventor is named in the

¹⁰¹ *Kimberly-Clark Corp. v. Procter & Gamble Distrib. Co.*, 973 F.2d 911, 917, 23 U.S.P.Q.2d (BNA) 1921, 1926 (Fed. Cir. 1992).

¹⁰² *University of Cal. v. Synbiotics Corp.*, 29 U.S.P.Q.2d (BNA) 1463, 1466 (S.D. Cal. 1993) (citing *Garrett Corp. v. United States*, 422 F.2d 874, 881, 164 U.S.P.Q. (BNA) 521, 526 (Ct. Cl. 1970)).

¹⁰³ See 35 U.S.C. § 116 (1994) (regarding correction of inventorship in a patent application); 35 U.S.C. § 256 (1994) (regarding correction of inventorship in an issued patent).

¹⁰⁴ See DONALD S. CHISUM, 1 CHISUM ON PATENTS § 2.04 (1985) (discussing correction of inventorship errors).

patent or patent application) could not be corrected prior to the 1982 and 1984 amendments.¹⁰⁵

Sections 116 and 256 contain provisions for the correction of inventorship mistakes. A pertinent portion of section 116 states:

[w]henever through error a person is named in an application for patent as the inventor, or through error an inventor is not named in an application, and such error arose without any deceptive intention on his part, the Commissioner may permit the application to be amended accordingly, under such terms as he prescribes.¹⁰⁶

Section 256, a companion provision to section 116, states as follows:

[w]henever through error a person is named in an issued patent as the inventor, or through error an inventor is not named in an issued patent and such error arose without any deceptive intention on his part, the Commissioner may . . . issue a certificate correcting such error.

The error of omitting inventors or naming persons who are not inventors shall not invalidate the patent in which such error occurred if it can be corrected as provided in this section. The court before which such matter is called in question may order correction of the patent on notice and hearing of all parties concerned and the Commissioner shall issue a certificate accordingly.¹⁰⁷

¹⁰⁵ *Id.*; see also *Garrett Corp.*, 422 F.2d at 881 n.5, 164 U.S.P.Q. (BNA) at 530 n.5 (noting that if one party had been the sole inventor of a claim, correction of inventorship could not occur, "because no proper inventor was named *ab initio*").

¹⁰⁶ 35 U.S.C. § 116 (1994).

¹⁰⁷ 35 U.S.C. § 256 (1994).

These sections are nearly identical to each other. Both sections allow for correction in cases of misjoinder (i.e., when a person was named as an inventor and is not one), non-joinder (i.e., when a person is not named as an inventor and is one), and complete mistakes with respect to inventorship. Further, both sections require a lack of deceptive intent when the error in inventorship is made. However, these sections differ with respect to the presence of a comma after the mention of non-joinder and before the requirement of lack of deceptive intent.¹⁰⁸ Because of this difference, the Federal Circuit held in *Stark v. Advanced Magnetic, Inc.* that there are different standards for misjoinder and nonjoinder in patent applications than for issued patents.¹⁰⁹

Why the Federal Circuit established this distinction and whether this view is an accurate depiction of Congressional intent is examined below.

A. REQUIREMENT OF LACK OF DECEPTIVE INTENT

Both section 116 and section 256 contain two clauses, one dealing with misjoinder and the other with non-joinder.¹¹⁰ In section 116, these clauses are separated by commas, as is the requirement for lack of deceptive intent.¹¹¹ By contrast, in section 256, the second clause regarding non-joinder is not separated by a comma from the lack of deceptive intent requirement.¹¹² Though Congress has suggested in the legislative history that sections 256 and 116 should be interpreted in the same manner,¹¹³ the Federal Circuit has noted that they can be distinguished.

Each of these sections begins with the term “error.” The Federal Circuit construed this term to refer to “mistakes, whether deceptive and ‘dishonest’

¹⁰⁸ Section 116 states as follows: “. . . through error a person is named. . . , or through error an inventor is not named. . . , and such error arose without deceptive intention. . . ” 35 U.S.C. § 116 (1994).

Section 256 states as follows: “. . . through error a person is named. . . , or through error an inventor is not named. . . and such error arose without any deceptive intention. . . ” 35 U.S.C. § 256 (1994).

¹⁰⁹ 119 F.3d 1551, 43 U.S.P.Q.2d (BNA) 1321 (Fed. Cir. 1997).

¹¹⁰ See *id.* at 1553 (analyzing section 256).

¹¹¹ See *supra* note 108 (focusing on section 116’s presence of a comma).

¹¹² See *supra* note 108 (focusing on section 256’s absence of a comma).

¹¹³ See S. REP. NO. 82-1979, at 150 (1952), *reprinted in* 1952 U.S.C.C.A.N. 2394, 2401 (stating that “[s]ection 256 is a new section in the law that is correlated with section 116”); H.R. REP. NO. 97-542, at 10 (1982), *reprinted in* 1982 U.S.C.C.A.N. 765, 774 (stating that “[s]ection 256 . . . is a companion to section 116”).

or merely uninformed and 'honest.'"¹¹⁴ Due to the placement of a comma, the Federal Circuit has interpreted section 116 to allow for correction of inventorship, both in cases of misjoinder and of non-joinder, when the error was made with a lack of deceptive intent. In contrast, the Federal Circuit has determined that section 256 "allows correction in all misjoinder cases featuring an error and in those non-joinder cases where the unnamed inventor is free of deceptive intent."¹¹⁵

However, the Federal Circuit's distinction between section 116 and section 256 in *Stark* appears to be misguided, particularly in light of the legislative history and the rules promulgated by the Department of Commerce through the Code of Federal Regulations (C.F.R.) regarding correction of inventorship in pending patent applications and in issued patents.

As previously discussed, the legislative history states that section 256 of title 35 is a companion to section 116.¹¹⁶ Section 256 was added in an effort to simplify correction of inventorship so that patents would not be invalidated when a mistake regarding inventorship was discovered. Thus, these sections should be interpreted as having the same standards regarding non-joinder and misjoinder. No public policy is furthered by distinguishing issued patents from patent applications with regard to correction of inventorship requirements.

In a patent application, the inventors sign an oath stating that they are the true inventors and that the information stated is made without deceptive intent. If the patent issues, this oath remains the sole "proof" that the named inventors are the true inventors. Because inventorship statements are merely procedural matters, correcting inventorship during prosecution or after issuance should be allowed under the same circumstances.

The PTO allows for correction of inventorship in patent applications in accordance with section 1.48 of title 37 of the C.F.R.¹¹⁷ and for correction of inventorship in issued patents in accordance with section 1.324.¹¹⁸ Under section 1.48, correcting inventorship merely requires (1) a petition from each person being added or deleted as an inventor stating that the error in

¹¹⁴ *Stark v. Advanced Magnetic, Inc.*, 119 F.3d 1551, 1555, 43 U.S.P.Q.2d (BNA) 1321, 1324 (Fed. Cir. 1997).

¹¹⁵ *Id.*

¹¹⁶ H.R. REP. NO. 97-542, at 10 (1982) *reprinted in* 1982 U.S.C.C.A.N. 765, 774.

¹¹⁷ 37 C.F.R. § 1.48(a) (1998).

¹¹⁸ 37 C.F.R. § 1.48 (1998).

inventorship occurred without deceptive intent on his or her part, (2) an oath or declaration by the actual inventor(s), (3) the required fee, and (4) the written consent of any assignees, if an assignment has been made.¹¹⁹

The PTO, in promulgating this amendment to 37 C.F.R. § 1.48, removed the requirements for a statement of facts and diligence and explained the change as follows:

A statement that the error was made without deceptive intent is seen to be a sufficient investigation complying with the statutory requirement under 35 U.S.C. § 116, particularly as most petitions are eventually granted or an application can be refiled naming the new desired inventive entity. . . . Additionally it should be noted that the [PTO] views a petition under §1.48 to be a procedural matter and not to represent a substantive determination as to the actual inventorship.

. . . .
[F]urther inquiries into the matter other than a statement of lack of deceptive intent are a waste of [PTO] resources.¹²⁰

Thus, the PTO has continued to simplify an inventor's ability to correct inventorship in a pending application so that the patent prosecution process may continue.

Similarly, under section 1.324, a named patentee or unnamed inventor can file a petition with the PTO to issue a certificate naming the correct inventors.¹²¹ Such a petition has similar requirements to those under section 1.48. Thus the PTO recognizes section 116 and section 256 as requiring lack of deceptive intent in cases of non-joinder and misjoinder.

Because sections 256 and 116 are intended to fulfill the same policy goals, the same standards for correction of inventorship should be applied for issued patents as are applied to pending applications. Pending applications

¹¹⁹ 37 C.F.R. § 1.324 (1998).

¹²⁰ 62 Fed. Reg. 53,132, 53,138 (1997).

¹²¹ 37 C.F.R. § 1.324 (1998).

and issued patents should require that a lack of deceptive intent exists in both cases of non-joinder and misjoinder for correction of inventorship to occur.

Sections 116 and 256 provide a definition of joint inventorship and a relatively simple method for correcting inventorship. Thus, they appear to fulfill the goal of meeting the needs of team research. However, the 1984 Amendments do not relate to the issue of ownership of patent rights. As a result, were a court to construe the description of joint inventorship in sections 116 and 256 using the traditional view of joint inventors as co-tenants, the goal of meeting the needs of team research could potentially be defeated.

The next part will analyze a joint inventor's rights and the potentially disastrous results that can arise when an error in determining inventorship has occurred.

VI. PATENT CO-TENANCY AND ECONOMICS

The patent co-tenancy is different from traditional, common-law co-tenancy.¹²² Section 262 of the Patent Act addresses this as follows:

[i]n the absence of any agreement to the contrary, each of the joint owners of a patent may make, use, offer to sell, or sell the patented invention within the United States, or import the patented invention into the United States, without the consent of and without accounting to the other owners.¹²³

Thus, in *Ethicon, Inc.*, the unnamed inventor was able to grant a license to U.S. Surgical though the named inventor opposed such an act.¹²⁴

While *each* co-owner may "use the patent or license others to so use without liability to other owners, . . . a suit for infringement must be

¹²² Cf. JOYCE ET AL., COPYRIGHT LAW 236 (4th ed. 1998). Copyright law follows common-law co-tenancy notions. Joint authors of a copyrighted work have an independent right to use or to license the use of a work, subject to a duty to account to the other co-owners for any profits. *Id.*

¹²³ 35 U.S.C. § 262 (1994).

¹²⁴ *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 45 U.S.P.Q. (BNA) 1545 (Fed. Cir. 1998), *cert. denied* 119 S. Ct. 278 (1998). See *infra* notes 131-62 and accompanying text discussing *Ethicon, Inc.*

brought by *all* co-owners."¹²⁵ Thus joint inventors are "at the mercy of each other."¹²⁶ A joint inventor can license the patent without the permission of the other joint inventor(s) as many times as he or she desires, and thereby reduce the value of the invention. Further, if a joint inventor wishes to enter into litigation against a potential infringer, he cannot do so unless the other co-inventors voluntarily join in the suit.¹²⁷ Lastly, because section 102(f) requires that the invention be granted to the inventor, employers typically require their employees to assign the rights in the invention to the employer. However, contracts requiring an assignment of rights if a patent application is filed do not necessarily result in an assignment of the patent rights when an application is filed.¹²⁸ Therefore, at the time the patent application is filed, employers must identify the inventors and the inventors must assign their rights to the employer. If such assignments are not made, inventors have the right to license or to assign the rights to whomever they choose. Thus, if one inventor was not identified and did not make such an assignment, a competitor could receive a license to practice the invention that had been assigned to the employer by the named inventors. These problems can be illustrated by an examination of *Ethicon, Inc. v. United States Surgical Corp.*¹²⁹

A. DISCUSSION OF *ETHICON, INC. V. UNITED STATES SURGICAL CORP.*

¹²⁵ *Turchan v. Bailey Meter Co.*, 19 F.R.D. 201, 204, 109 U.S.P.Q. (BNA) 473, 475 (D. Del. 1956) (emphasis added) (citing 2 ERNEST BAINBRIDGE LIPSCOMB III, WALKER ON PATENTS 1450 (1987)); cf. 17 U.S.C. § 501(b),(c) (1994) (stating that co-tenants in copyright law are not required to join, by statute, though a court may compel their joinder).

¹²⁶ *Turchan*, 19 F.R.D. at 204, 109 U.S.P.Q. (BNA) at 475 (citing *McDuffee v. Hestonville, M. & F. Pass. Ry. Co.*, 162 F. 36, 39 (3d Cir. 1908)).

¹²⁷ *Bendix Aviation Corp. v. Kury*, 88 F. Supp. 243, 247-48, 84 U.S.P.Q. (BNA) 189, 192-93 (E.D.N.Y. 1950) (requiring joinder of a joint owner in a patent because he was an indispensable party to the action); *Turchan*, 19 F.R.D. at 204, 109 U.S.P.Q. (BNA) at 475 (stating that the reason for requiring joinder is to preserve each co-inventor's right to grant a license); see FED. R. CIV. P. 19(a),(b) (concerning joinder of necessary and indispensable parties).

¹²⁸ See *Filmtec Corp. v. Allied-Signal, Inc.*, 939 F.2d 1568, 1572, 19 U.S.P.Q.2d (BNA) 1508, 1510 (Fed. Cir. 1991) (stating that an inventor's employment contract which obligates him to transfer all patent rights to inventions made while an employee does not act as an assignment, i.e., the employer does not have the right to sue for patent infringement. However, the employer's interest in the patent may "be in the nature of an equitable claim").

¹²⁹ 135 F.3d 1456, 45 U.S.P.Q.2d (BNA) 1595 (Fed. Cir. 1998), cert. denied 119 S. Ct. 278 (1998).

In *Ethicon Inc. v. United States Surgical Corp.*, one of the joint inventors, Choi, refused to join suit against a potential past and future infringer and granted a “retroactive license” to the potential infringer.¹³⁰ The Federal Circuit held that Choi, although he was not named on the patent application, was a joint inventor and was an indispensable party to any infringement action.¹³¹ Because the co-inventor, Choi, refused to join in the infringement suit, the plaintiff was unable to pursue the action. In effect, the non-joined co-inventor unilaterally invalidated the patent.

The patent at issue in *Ethicon, Inc.*, U.S. Patent No. 4,535,773, was directed to a safety trocar.¹³² It issued to Dr. InBae Yoon as the sole inventor.¹³³

In 1980, Dr. Yoon met Mr. Young Jae Choi, an electronics technician with some college training in physics, chemistry and electrical engineering.¹³⁴ Until 1982, they worked together on Dr. Yoon’s projects, including the safety trocar project.¹³⁵ In 1982, after Choi left, Yoon filed an application for a patent relating to various embodiments for a safety trocar, naming himself as the sole inventor.¹³⁶ In 1985, the patent issued with fifty-five claims. Yoon subsequently granted an exclusive license to Ethicon.¹³⁷ Yoon never informed Choi of the application nor of its issuance.¹³⁸

In 1989 Ethicon filed suit against U.S. Surgical for infringement of claims 34 and 50 of the patent.¹³⁹ While the suit was pending, U.S. Surgical learned of Choi’s role in the invention and obtained a “retroactive license” to

¹³⁰ *Id.* at 1458.

¹³¹ *Id.* at 1468 (stating that because “Ethicon’s complaint lacks the participation of a co-owner of the patent[.]. . . [the] court must order a dismissal of [the] suit”).

¹³² *Id.* at 1459. A conventional trocar is a surgical instrument which makes small incisions in the wall of a body cavity to allow for the placement of endoscopic instruments, such as small cameras or surgical instruments. Conventional trocars posed a risk of damage to internal organs. The safety trocar alleviated these risks by utilizing a blunt spring-loaded rod. As soon as the trocar pierces the cavity wall, the rod springs forward to precede the blade and to protect internal organs from injury. In a second embodiment, the safety trocar has a retractable trocar blade which springs back into a protective sheath once the blade passes through the cavity wall. *Id.*

¹³³ *Id.* at 1459.

¹³⁴ *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1458, 45 U.S.P.Q.2d (BNA) 1545, 1547 (Fed. Cir. 1998), *cert. denied* 119 S. Ct. 278 (1998).

¹³⁵ *Id.* at 1459.

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1459, 45 U.S.P.Q.2d (BNA) 1545, 1547 (Fed. Cir. 1998), *cert. denied* 119 S. Ct. 278 (1998).

practice his trocar inventions and to receive his assistance in any suit regarding the patent.¹⁴⁰

The District Court for the District of Connecticut found that Choi was a joint inventor of the patented subject matter because he had contributed to claims 33 and 47, claims which U.S. Surgical was not alleged to have infringed. On appeal, the Federal Circuit affirmed the District Court's finding of joint inventorship.¹⁴¹ It further held that although the retroactive license was not an effective grant of rights to practice the invention, the case must be dismissed because of Choi's refusal to join as a plaintiff in the suit.¹⁴²

In reaching this result, the Federal Circuit stated that "as a matter of substantive patent law, all co-owners must ordinarily consent to join as plaintiffs in an infringement suit."¹⁴³ Though the majority readily accepted that the voluntary joinder of all co-owners was required under the Patent Act, Judge Newman disagreed. She devoted the majority of her dissent to establishing that inventors who had contributed less to the conception of the invention owned a smaller portion of the rights to the invention than an inventor who had contributed more to the invention. Her position will be discussed below.

B. DISCUSSION OF THE DISSENT IN *ETHICON, INC.*

Judge Newman stated that prior to the 1984 Amendments, joint inventors received equal ownership rights in the entire patent because all of the circuits followed the "all claims" rule.¹⁴⁴ While this view inaccurately represented the confusion which existed prior to the 1984 Amendments regarding the correct rule for joint inventorship,¹⁴⁵ the fact that the "all claims" rule was a valid

¹⁴⁰ *Id.* at 1458.

¹⁴¹ *Id.* at 1465. *Cf. supra* Part II.D (discussing *Land v. Dreyer*, 155 F.2d 383, 69 U.S.P.Q. (BNA) 602 (C.C.P.A. 1946)).

¹⁴² *Ethicon, Inc.*, 135 F.3d at 1467, 45 U.S.P.Q.2d (BNA) at 1554. The court held that the retroactive license by Choi could "not release U.S. Surgical from its liability for past accrued damages to Ethicon, only from liability to himself." *Id.*

¹⁴³ *Id.* at 1468.

¹⁴⁴ *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1470, 45 U.S.P.Q.2d (BNA) 1545, 1556 (Fed. Cir. 1998), *cert. denied* 119 S. Ct. 278 (1998) (stating that before the 1984 amendments, "joint invention" required mutuality of interaction, a real partnership in the creation and development of the invention," and thus "a joint inventor" was, also, justly and legally, an equal owner of the idea and of any patent thereon"). *See supra* Part III.A (discussing the "all claims" rule).

¹⁴⁵ *See supra* Parts III.A and B (discussing the "all claims" rule and the "non-all claims" rule).

basis for determining joint inventorship prior to 1984 justifies a presumption of equal contribution in the invention.¹⁴⁶

1. *Discussion of the Partnership Theory.* The justification for the pre-1984 property rule that joint inventors have equal and undivided interests in the patent can be explained in terms of a partnership theory.¹⁴⁷ It has been noted that “[i]f joint inventors were members of a ‘partnership,’ whereby they expended equal amounts of inventive effort and shared in the success or failure of their project, then a rule providing equal interests in any resulting patent seemed entirely equitable.”¹⁴⁸ Because there was a doubt as to the requirements for joint inventorship, one could have postulated that a partnership between co-inventors existed prior to the 1984 Amendments. However, with the enactment of the 1984 Amendments, which expressly rejected the “all claims” rule, the partnership theory can no longer be used as a justification for the grant of equal and undivided interests for co-inventors.¹⁴⁹ Though there is no longer a theoretical basis for patent co-tenancy, because the 1984 Amendments did not alter patent ownership rights, this rule remains.¹⁵⁰

2. *Division of Patent Rights.* Due to the potential for inequitable results under the traditional view, Judge Newman proposed that the property rights be divided amongst the joint inventors. She stated that common law property rights and the statutes which implemented them did not recognize granting a complete property right to one who was a minor contributor to the creation of the property interest.¹⁵¹ According to Judge Newman, since Choi had only contributed to two of the claims, he was a contributor to a

¹⁴⁶ See Dale L. Carlson & James R. Barney, *Who Owns What's in Your Patent?*, INTELL. PROP. TODAY, June 1998, at 8 (stating that “even if the ‘all claims’ rule was never universally accepted as law, there seems to be some historical merit to Judge Newman’s premise,” since it provided a “logical basis and foundational support for the . . . inventors”).

¹⁴⁷ See *id.* (noting Judge Newman’s “partnership theory” as the basis for undivided and equal property rights in inventions for co-inventors).

¹⁴⁸ *Id.*

¹⁴⁹ See *id.* (stating that since the enactment of the 1984 Amendment, the “all claims” rule “was effectively overruled by statute, and thus, the ‘partnership’ theory of joint inventorship was completely eviscerated”); *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1471, 45 U.S.P.Q.2d (BNA) 1545, 1557 (Fed. Cir. 1998), *cert. denied* 119 S. Ct. 278 (1998) (stating that after the 1984 Amendments to section 116, “the legal premise that each named person had made a full and equal contribution to the entire patented invention became obsolete”).

¹⁵⁰ *Ethicon, Inc.*, 135 F.3d at 1471, 45 U.S.P.Q.2d (BNA) at 1557.

¹⁵¹ See *id.* (stating that the common law did not “treat all persons, however minor their contribution, as full owners of the entire property as a matter of law”).

minor portion of the invention. Thus, he was not a joint owner and could not grant a license to U.S. Surgical to practice all fifty-five claims.¹⁵²

While Judge Newman did not recognize minor contributors as joint owners, she recognized that such individuals are inventors who should receive some ownership rights. In discussing Dr. Yoon's attempt to divide the patent through reissue,¹⁵³ Judge Newman noted that "[t]here may be a need for determination of the respective rights of Dr. Yoon and Mr. Choi."¹⁵⁴ Based on her further discussion of the traditional co-tenant's right to partition, it appears that she advocates dividing the ownership interests based on the inventorship of each individual claim.¹⁵⁵

3. *Problems with Judge Newman's Suggestion.* Judge Newman's suggestion of partitioning the patent rights among joint inventors has been criticized as requiring major changes in the way patents are documented and enforced.¹⁵⁶ Though such a rule would still accomplish the goal of promoting team research, the hassle of the "all claims" rule would remain. Under Judge Newman's proposed rule, documentation for each contribution made by each inventor could be required to determine which inventor contributed to which claim(s).

Presently the PTO does not investigate inventorship claims. In the past a petition to correct inventorship under 37 C.F.R. §1.48 required a statement of facts explaining why a correction of inventorship was necessary and how the error arose; however, under a 1997 amendment, it no longer requires such a statement.¹⁵⁷ Correction of inventorship is merely a procedural matter and does not represent a substantive determination as to actual inventorship.¹⁵⁸ Thus, the PTO appears to be simplifying the procedure required for correcting inventorship in patent applications to expedite the

¹⁵² *Id.* at 1472.

¹⁵³ Reissue arises when the applicant believes the original patent to be wholly or partly inoperative (1) by reason of a defective specification or drawing, or (2) by reason of the patentee claiming more or less than he had the right to claim in the patent. A reissue declaration or oath requires a statement as to why the applicant is requesting a reissue, a statement of at least one error being relied upon as the basis for the reissue, and a declaration that the errors being corrected were made without deceptive intent on the part of the applicant. 37 C.F.R. §1.175(a) (1998).

¹⁵⁴ *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1472 n.10, 45 U.S.P.Q.2d (BNA) 1545, 1558 n.10 (Fed. Cir. 1998), *cert. denied* 119 S. Ct. 278 (1998).

¹⁵⁵ *Id.* (stating that "dividing the patent would comport with common law practices") (citing REAL PROPERTY ¶ 607[1]; *Hamilton v. Hamilton*, 597 A.2d 856, 859-60 (Del. Fam. Ct. 1990)).

¹⁵⁶ *Carlson & Barney*, *supra* note 146.

¹⁵⁷ 37 C.F.R. § 1.48(a) (1998).

¹⁵⁸ See *supra* note 120 and accompanying text (discussing the changes in 37 C.F.R. § 1.48 (1998)).

prosecution of patents and to prevent technical arguments regarding inventorship from invalidating a patent.

Further, because joint inventorship is a voluntary relationship, any inequalities which result from the co-tenancy arrangement described by section 262 can either be accepted by the inventors or dealt with through a contract between the parties.¹⁵⁹ However, in light of the decision in *Ethicon, Inc.*, patent attorneys must carefully advise clients with respect to difficulties which can arise due to joint inventorship.

Though the potential problems under the present rule can be avoided through contract, such a solution requires an initial determination of inventorship. Because a determination of inventorship is often difficult,¹⁶⁰ other solutions to inventorship problems will be examined next.

VII. TWO SUGGESTIONS FOR AVOIDING THE PROBLEM IN *ETHICON, INC.*

Ethicon, Inc. could have been avoided if Yoon had realized that Choi was a co-inventor or if Ethicon had been able to sue for infringement without the voluntary joinder of all co-inventors. Each of these solutions is examined below.

A. GUIDELINES FOR DETERMINING INVENTORSHIP

The problem in *Ethicon, Inc.* could have been avoided by a clearer definition of inventorship. Significant factors for inventorship determinations can be designed by the PTO and incorporated into the C.F.R. or the Manual of Patent Examining Procedure (M.P.E.P.) or passed as Congressional legislation. If such guidelines are present, employers and/or

¹⁵⁹ Two exceptions to the general rule that all co-owners must consent to join as plaintiffs in an infringement suit exist: (1) if, by agreement, a co-owner waives his right to refuse to join suit, other co-owners may subsequently force him to join in a suit against infringers, and (2) when a patent owner has granted an exclusive license, he stands in a relationship of trust to his licensee and must permit the licensee to sue in his name. See *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1468 n.9, 45 U.S.P.Q.2d (BNA) 1545, 1554 n.9 (Fed. Cir. 1998), cert. denied 119 S. Ct. 278 (1998) (citing *Willingham v. Lawton*, 555 F.2d 1340, 1344-45, 194 U.S.P.Q. (BNA) 249, 252 (6th Cir. 1977) for the first exception and *Independent Wireless Tel. Co. v. Radio Corp. of Am.*, 269 U.S. 459, 469 (1926) for the second exception).

¹⁶⁰ See *supra* Part III (discussing determinations of inventorship based on conception).

inventors can more easily determine whether or not a given individual is an inventor and make the appropriate contractual arrangements.

To qualify as conception in a determination of inventorship, the idea must be "complete and operative and such as would enable a person skilled in the art to reduce the conception to practice without any further research or exercise of the inventive skill."¹⁶¹ Factors that should be addressed in determining whether an individual contributed to conception include: (1) what are the novel and nonobvious aspects of the claimed invention, (2) what role did each individual play in creating the claimed invention, and (3) which individuals made contributions that resulted in nonobvious changes in the development of the claimed invention. The first factor can be determined by reading the specification of the patents. Particular focus should be given to the discussion of the objects of the invention and the problems with the state of the art. In determining the second factor, one should examine whether a potential inventor merely acted under another's direction or whether he contributed to specific elements which make the claimed invention novel and nonobvious. In examining the third factor, one should determine whether the person of interest added knowledge beyond that of a knowledgeable salesperson.¹⁶² In making such a determination, one must distinguish the state of the art from the specific, unique details which are covered in the claims of the patent or application at issue. Thus, the determination of inventorship should not be made until the claims are written.

If the question of joint inventorship is confronted early on, precautions can be taken to support an inventorship claim. Because clear and convincing evidence is needed to support a claim of non-joinder or misjoinder, an alleged joint inventor's testimony is insufficient evidence of the required collaboration; rather, corroborating evidence is needed to support such an allegation. Sufficient corroboration can be found in evidence of discussions or interactions between the joint inventors (e.g., tapes, written records, etc.). Thus, if an inventor fears that he may be excluded from a patent application,

¹⁶¹ Land v. Dreyer, 155 F.2d 383, 387, 69 U.S.P.Q. (BNA) 602, 605 (C.C.P.A. 1946); see *supra* notes 56-57 and accompanying text (discussing that this is an elaboration of the "Mergenthaler standard").

¹⁶² See Hess v. Advanced Cardiovascular Sys., Inc., 106 F.3d 976, 981, 41 U.S.P.Q.2d (BNA) 1782, 1787 (Fed. Cir. 1997) (holding that one who simply provides the inventor with well-known principles or explains the state of the art without ever having a firm definite idea of the claimed invention as a whole does not qualify as a joint inventor).

he should create a paper trail while working with others to demonstrate that ideas were shared and discussed between the joint inventors.

Though inventorship is easily corrected under 35 U.S.C. § 256, the situation of *Ethicon, Inc.* could easily repeat itself (i.e., the patent could be practically invalid against a given infringer because that infringer had obtained a license from a previously unnamed inventor). In light of this potential disaster, if one is uncertain whether an individual is an inventor, one should name him as an inventor and have the proper assignments made. If the patent is litigated and the individual is found to be improperly joined, the mistake can easily be corrected without loss of patent rights.¹⁶³

In the absence of action by the PTO or by Congress, patent counsel can use such guidelines at the time of filing to determine the roles each member of the research team played and to record whether an individual made an inventive contribution to a claim. Such analysis should continue as claims are amended and canceled.

B. INVOLUNTARY JOINDER

A second solution addresses the requirement of voluntary joinder in a patent infringement suit. Rule 19 of the Federal Rules of Civil Procedure (FRCP) relates to the joinder of necessary and indispensable parties. Factors for determining whether a given party is "indispensable" include the following:

- (1) the extent to which a judgment rendered in the party's absence might be prejudicial to the party or those who have already been made parties;
- (2) the extent to which this prejudice can be lessened or avoided by other measures;
- (3) whether a judgment rendered in the party's absence is adequate; and
- (4) whether the plaintiff will have an adequate remedy if the action is dismissed for nonjoinder.¹⁶⁴

For the first factor, the court examines whether legal or practical damage will result if it proceeds without this party. The present parties may be

¹⁶³ See *supra* Part V (discussing the ease with which inventorship can be corrected).

¹⁶⁴ FED. R. CIV. P. 19(b).

subjected to multiple suits if the co-owner is not a party to the action. While multiplicity of suits is a valid reason for requiring joinder, this is not a good reason for requiring *voluntary* joinder. Under FRCP 19(a), the court may join a person as an involuntary plaintiff or defendant.¹⁶⁵ Additionally, each co-owner has an interest in protecting his or her rights in the patent. Thus, he or she should desire to be a party to the action.¹⁶⁶

Under the second factor, avoidance of adverse consequences, a court examines whether alternate means are available to the court to minimize potential damages. Again, here, the co-owner can be joined as an involuntary plaintiff, thus adverse consequences can be avoided.

Under the third factor, the court examines whether the judgment is adequate from the perspective of the public's interest in the efficient and final resolution of legal disputes. If a judgment in a party's absence leaves related claims by or against that person undecided, this may be an inadequate judgment. Such a determination could be avoided if the co-owner was joined as an involuntary plaintiff.

In the fourth factor, the court examines whether another forum is available to the plaintiff. This factor is particularly important when the other party cannot be joined. In patent suits, the plaintiff could be joined. Further, if the court required voluntary joinder, there would be no forum in which the plaintiff could sue the alleged infringer. This factor, like the other three, weighs in favor of a court's joining the co-owner as an involuntary plaintiff.

Had either of these solutions existed, *Ethicon, Inc.* would likely have been resolved differently. If the guidelines were present when the patent was drafted and filed, Yoon would have examined closely whether Choi was an inventor and avoided the problem by receiving an assignment of rights from him. Alternatively, if involuntary joinder was allowed, Ethicon would have likely won the case for past infringement, though it would not have received damages for future infringement, in light of Choi's assignment to U.S. Surgical.

¹⁶⁵ FED. R. CIV. P. 19(a).

¹⁶⁶ See Carlson & Barney, *supra* note 146, at 10 (asking "when one considers that each joint owner already has the ability to unilaterally prejudice the pecuniary interests of the other owners . . . why shouldn't they also be at the mercy of each other with respect to unilateral enforcement actions[?]").

VIII. CONCLUSION

The result of *Ethicon, Inc.*, in which an originally unnamed co-inventor is able to unilaterally invalidate the patent, demonstrates that remedies to this problem are needed. Under the first proposed solution, Congress and/or the PTO should promulgate more specific guidelines for determining inventorship. Even if the PTO or Congress does not promulgate such guidelines at the time of filing and throughout the prosecution of a patent application, patent attorneys should work with their clients to analyze the role individuals played in the conception of the claimed subject matter. In light of *Ethicon, Inc.*, much care should be taken in making a correct determination of inventorship before the patent issues. Under the second proposed solution, the courts should join non-consenting co-owners as involuntary plaintiffs. The patent system, which was created to promote advances in science and engineering by granting a limited monopoly to inventors, does not serve its purpose when inventors lose patent rights due to such technical errors. Though alleging inventorship at the time of filing a patent application is done by simply signing a declaration, one must be careful to ensure that the correct inventorship is stated to avoid practical invalidation of a patent.

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