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Windfall Property Rights for the Left Out Co-Inventor Who Gets Let Into the Patent

Philip Konecny

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I. INTRODUCTION

A surgeon works for years to develop the complex multitude of attachments and interrelationships of a device to enter the space that surrounds abdominal organs and perform surgical procedures within. The paradox of inventorship of a surgical instrument is that for it to work naturally, sometimes the technology gets very complex. This abdominal trocar for tiny incision intra-abdominal surgery is one of the complex kind of surgical inventions. The surgeon inventor enlists technical help to solve special problems beyond his skill, like engineering electrical-mechanical circuitry. The surgeon is not so into the legalities of research that he obtains prior assignment of patent rights from the helper that he employs. One technician helps the surgeon to design a tactile feedback component of the device. The technician's help could be characterized as merely making the innovator's ideas work without much creativity or fiddling around. On the other hand the help could be characterized as requiring some creativity an experimentation leading to a new solution for making this aspect of the instrument work. The surgeon eventually puts together his whole device, including the tactile feedback component, and patents it. However, he does not name the engineer in the patent application. The surgical community embraces the concept of minimally invasive abdominal surgery. The device turns out to be widely accepted by the surgical community, and thus commercially valuable.

The device is a blockbuster worth mounting a patent fight. If a competitor could make and sell the surgical device, this would mean big bucks, either lost by the owner of the patent or gained by the competitor. The patent presents a problem to a competitor. However, each and every claim of the patent reads on devices which are saleable to the surgical community. The competitor could avoid the claims of the patent by designing around them. This would require investment in research and development, with the attendant risk of failure. The competitor could purchase a right to make and use through a license for a price and if the patent owner were willing to accept entry of a competing manufacturer into the field. The competitor could attack the patent in an attempt to render it invalid or unenforceable. This would require investment in patent litigation with its risk of failure. The final alternative is for the competitor to acquire rights of co-ownership in the patent by licensing from the engineer whatever right he may have in the patent and litigating to have him named as co-inventor with co-ownership rights. The

competitor would put the cost of license for arguable ownership rights and the cost of patent litigation at risk,¹ but the prize would be so much more attractive. That is, the prevailing competitor could become a co-owner of the monopoly right. This would be preferable to an attack on validity because with a successful attack on validity, the competitor would defeat his own possibility of monopolistic advantage.

In our situation, the competitor contracts with the engineer to acquire whatever rights he might have in the ownership of the patent for the surgical device. The competitor makes an infringing device and, not surprisingly, is sued for infringement. The accused infringer's defense is that the engineer contributed substantially to the invention. He is a co-inventor, albeit left out of the patent application. The competitor, as the assignee of the patent rights of the co-inventor, is the real party in interest. The board is set between two giants in the surgical instruments industry. They have assets sufficient to sustain the costs and risks of patent litigation, and a blockbuster patent that makes the reward worth the pot.

The court agrees that the technician contributed a novel, albeit small, component of the patent. It names the technician as a co-inventor, not only of the component upon which he worked, but of each and every claim, including the claims to which the technician never contributed at all. The court holds that for two hundred years co-ownership rights in a patent have been equivalent to cotenancy rights in property. It seems the engineer got much more benefit from being than he contributed, while the surgeon was cheated out of the just fruits of his inventive genius and investment.

This is the discouraging story of Dr. Yoon and his surgical trocar designed for minimally invasive entry into the abdominal cavity.² He invented a trocar that punctures the inner wall of the abdominal cavity (the peritoneum) without puncturing the intestines that lie up against the inside of the peritoneum. It was a marvelous instrument which was described with 55 claims in U.S. Patent No. 4,535,773.

1. The litigation costs of an attack based on co-inventorship could be much less than for an attack on validity. The cost of patent litigation for a patent where a million dollars is at stake can be \$500,000. The cost of patent litigation for patents where more than one hundred million dollars is at stake can be as high as fifteen million dollars per party, AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION, REPORT OF ECONOMIC SURVEY 1999, 76-77(1999). Hypothetically, the incremental litigation cost is for a more exhaustive search for invalidating prior art. An attack on ownership, in contrast, would be spared the cost of a search for invalidating prior art.

2. See generally *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456 (Fed. Cir. 1998).

However, because Dr. Yoon was found to be a co-inventor in two of the claims, he was denied sole ownership of this invention.³

This is the chilling story of the precarious position into which any innovator places himself when he discusses his inventive goals without first attending to assignment of any patent rights that might arise out of collaboration.⁴ The non-institutional and non-corporate individual inventor, prevalent in biomedical research, can lose possession of patent ownership rights if he does not provide for assignment of patentable discoveries of his employees and contractors prior to collaborative participation.

This is also the surprising story of the left out collaborator who gets let into extensive patent rights through an attack on patent ownership rights using 35 U.S.C. § 256.⁵ Where the left out co-inventor contributed less, much less, to all the claimed elements of the patented invention than did the primary inventor, yet the reward of co-ownership of patent rights in all the claims is surprisingly inequitable. As a method of acquiring the advantage of technological monopolies, patent litigation is favored over research and licensing. That is, the reward to risk calculus is so skewed for would-be competitors that finding a likely unnamed co-inventor is highly favored over licensing and independent development. For the left out co-inventor, excluding all other competitors but the other co-inventor is better and less expensive than achieving the status of patent noninfringement based on invalidity. Tempted by such disproportionate rewards a Section 256 defense is better characterized as a Section 256 attack.

Title 35 U.S.C. §256 provides that a co-inventor omitted from an issued patent may be added to the patent by a court.⁶ Title 35 U.S.C.

3. *Id.* at 1465. *See infra*, Part VI.

4. *See generally* Pannu v. Iolab Corp., 155 F.3d 1344 (Fed. Cir. 1998) (inventor of shape of intraocular lens discussed with intraocular lens manufacturer about structure of intraocular lens and claimed structure without naming manufacturer as co-inventor, manufacturer prevailed). *See also* Hess v. Advanced Cardiovascular Systems, Inc., 41 U.S.P.Q.2d (BNA) 1782 (Fed. Cir. 1997) (inventors of balloon angioplasty catheter discussed with technician about heat shrinkable material for tubing without naming technician as co-inventor, technician failed to prevail).

5. The majority in *Ethicon* found that the engineer, Mr. Choi, owned an equal share of all of the claims, even those that were exclusively invented by Mr. Yoon. *Ethicon*, 135 F.3d at 1466. *See infra*, Part VI.

6. 35 U.S.C. § 256 (1994). "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." Further, 35 U.S.C. § 116 ¶ 3 (1994), a companion section to § 256, provides for similar powers vested in the Commissioner of Patents in an application for patent.

§ 116 ¶ 1, as amended in 1984, provides that a person may be named a co-inventor of a patent even if he did not make a contribution to each claim of the patent.⁷ The bane for the named inventor and the bounty for the added co-inventor are that the Congress did not specify in the Code the scope of the rights an added co-inventor acquires after being added to the patent or when and whether a left out contributor should be added as a co-inventor to the patent. Of all the circumstances that the court could have chosen as a basis for granting co-inventor status under the changed § 116 ¶ 1 landscape, the *Ethicon* court chose conception of any element of the complete invention. Of all the rights that a court could conceivably grant as remedy to the omitted co-inventor, the *Ethicon* court chose that a co-inventor added to a patent pursuant to § 256 under the amended § 116 ¶ 1 acquired undivided co-ownership rights in all the claims of the patent, whether the added co-inventor contributed to each claim or not.⁸ Additionally, the *Ethicon* court held that all co-owners, including the newly added co-inventor, must be joined in order to press a claim of infringement.⁹ A refusal by the added co-inventor to join such a claim as plaintiff required dismissal of that infringement action¹⁰ When the newly added co-inventor is the accused infringer, the benefits of a successful § 256 defense/attack are enhanced. Even the issue of past

Whenever through error a person is named in an application for a 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.

Amendments under § 116 are limited to circumstances where the applicants are in agreement as to co-inventorship and affirm no deceptive intent.

7. 35 U.S.C. § 116 (1994).

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.

8. See *Ethicon*, 135 F.3d at 1465.

9. *Id.* at 1465.

10. See *id.* at 1466-68. As a third holding, the co-ownership of patent rights became effective as of the date of the court ordered correction. Rights attendant to requirement of joinder of all co-inventors to pursue an infringement claim became effective as of the date of the court ordered correction. If an infringement suit was begun prior to correction, and the newly added co-inventor refused to join the suit, the suit must be dismissed. The added co-inventor could not release an alleged infringer from liability for past accrued damages to named co-inventor, but if the added co-inventor refused to join such a suit required dismissal. Presumably, if an infringement suit had been already completed, the added co-inventor could not overturn that result. The litigation issue here is that if the putative co-inventor licenses his ownership rights in the patent to the party accused of infringement, the infringer licensee can use § 256 as a defense to accomplish dismissal of the infringement action and as an offense to be named as co-licensee of at least some of the patent claims.

infringement becomes moot.

The dissent correctly pointed out the problem with the majority's holding: the result was inequitable as it gave the newly added co-inventor full rights with respect to claims for which he made no contribution, even when those claims formed the overwhelming basis for the patent.¹¹ Such a disproportionate result presented a windfall for the omitted co-inventor and his assignee.

In order to assess the *Ethicon* holding, this paper will trace the historical development of the doctrines of property rights and co-inventorship in patents to give meaning to the correlation between cotenancy rights in property and co-ownership rights in patents after the amendment of § 116 ¶ 1. Under the current co-inventorship rules, this paper will discuss the alternatives the courts have in awarding rights to omitted co-inventors. One of the alternatives may be for the court to adjust its analysis of subsequent cases to dilute the perceived inequitable windfall of equal ownership rights granted to the added co-inventor.¹² Finally, this paper suggests remedial actions on the part of the courts, Congress and the Patent and Trademark Office.

II. THE OWNERSHIP/INVENTORSHIP PARADIGM

In order to examine the alternatives available to the courts when considering which of the bundle of property rights to grant to a left out co-inventor, it is necessary to examine the historical background of the interdependent relationship between the high standard for co-inventorship and the granting of the complete bundle of cotenancy rights to co-inventors. The precedential history of granting cotenancy property rights in patents is co-dependent on limiting co-inventorship to substantial and simultaneous contribution by each co-inventor to each and every element of each and every claim of the patent. With the passage of 35 USC § 116 in 1984, Congress altered the co-inventorship moiety of this paradigm. This fundamentally altered the codependent relationship between co-inventorship and co-ownership. The requirement that co-inventors be co-tenants in patent ownership was left without precedential support where collaborators contributed substantially differently to different elements of the invention. The meaning of the co-ownership moiety was not specified by Congress and is not specified in precedent under

11. *See id.* at 1468-72.

12. *See Pannu*, 155 F.3d at 1351 (left out collaborator as to one claim may not exclude named inventor from all claims where there is a bar based on prior placement of the invention into the art).

conditions of this altered paradigm. Court precedent does not demand inequitable results that favor litigation over research.

Early Code allowed that more than one inventor could contribute to a patent both through the use of plural forms (“inventors”) in literal construction and through the general allowance of the understanding of the singular to mean plural throughout the statute.¹³

Originally, the courts’ concept of valid co-inventorship was limited to simultaneous, substantial contribution to each and every element of the invention by each and every co-inventor. Another way of expressing this rule is one inventor, one invention, one patent, or, as a begrudging alternative, co-inventors, one invention, one patent.¹⁴

Thus, although the Code did not prohibit co-inventors, early case law sharply limited the circumstances under which co-inventors could be recognized. As stated by the Supreme Court:

The settled rule of law is, that whoever first perfects a machine is entitled to the patent, and is the real inventor, although others may have previously had the idea and made some experiments towards putting it in practice. He is the inventor and is entitled to the patent who first brought the machine to perfection and made it capable of useful operation.¹⁵

Likewise from a contemporaneous circuit court decision:

[B]y the patent act, no person could entitle himself to a patent for any machine, unless he was the true inventor of it By the expression in the statute, ‘true inventor,’ is undoubtedly meant the sole and exclusive inventor; for if the machine were the joint invention of several persons, neither of them could claim to be the true inventor, having an exclusive title to the patent; but the interest would be a joint or common interest in the whole. In such a case, therefore, if a party were to obtain a patent for the invention, having sworn, that he was the true inventor, he would,

13. See 8 Donald S. Chisum, CHISUM ON PATENTS, app. 1 (1999).

14. See *Washburn v. Gould*, 29 F. Cas. 312, 317, 3 Story 133 (C.C.D. Mass. 1844) (No. 17,214).

15. *Agawam Co. v. Jordan*, 74 U.S. 583, 602 (1869). Although Justice Story referenced *Washburn v. Gould*, 3 Story, 133 as the source of his paraphrase in *Agawam*, the court in *Washburn*, when it made this statement, was concerned with the issue as to whether the inventor had put together old elements into a new invention so as to be entitled to a valid patent. “The law is, that whoever first perfects a machine, is entitled to the patent, and is the real inventor, although others may previously have had the idea, and made some experiments towards putting it in practice.” *Washburn* 29 F.Cas. at 317. The Court in *Agawam* goes beyond this accepted principle to reach a higher standard for joint invention of “inventing” the ‘entire invention,’ “a complete and perfect machine, embracing the substance of all that is embodied in the patent.” Nevertheless, the *Agawam* case was concerned with patent invalidation, and could be thought of as limited to this circumstance, instead of being extended to an action for naming as co-inventor.

in the language of the act, obtain it “upon false suggestion”; and as such false suggestion would be a surprise and fraud upon the government, it might well also be declared to be obtained “surreptitiously.”¹⁶

Compared to modern standards, there was extreme reluctance in early case holdings to recognize co-inventorship. For example, only when forced by a special finding of fact by the jury “that the plaintiff and defendant were both concerned in the invention. . .” did the court allow “that the invention was the result of their joint, and not of their several and independent labors.”¹⁷

The judicial reluctance toward allowing co-inventorship expressed itself by requiring a high standard for conception and contribution. The high standard required simultaneous conception and reduction to practice by the collaborators.¹⁸ Each named co-inventor had to jointly conceive and contribute substantially the same to each element of the invention claimed to be granted joint patent rights.¹⁹

Not finding a simultaneous and substantially similar contribution to each element of the whole invention by each putative co-inventor, the courts were likely to find that the co-inventor who contributed to less than every element of the invention was merely an assistant and not entitled to any of the rights flowing from the issued letters patent. If one co-inventor did not contribute as much to all of the elements of a single invention as the other, the court was likely to find against the former, and invalidate the patent. As stated in an early District Court decision:

[The inventors] were entitled to a joint patent for what they jointly invented. It may be that their minds co-operated in combining the different parts which resulted in the production of the complete machine, but a joint patent can be sustained only for a joint invention; and the evidence shows that [one of the inventors] did not contribute to the invention covered by the tenth claim.²⁰

16. *Stearns v. Barret*, 22 F. Cas. 1175 (C.C.D. Mass. 1816), Case no. 13,337, 1 Mason, 153, the circuit judge overturning the district court holding based on the jury’s finding, ‘that the plaintiff and defendant were both concerned in the invention.’

17. *See id.* at 1181.

18. *See id.* (requiring for the status of joint invention “simultaneous production of the genius and labor of both parties.”)

19. *See Ethicon*, 135 F.3d at 1469 (Newman, J., dissenting).

20. *Stewart v. Tenk*, 32 F. 665, 666 (C.C.S.D. Ill. 1887) (concerning a patent issued on an invention with twelve claims, one claim contributed to by only one co-inventor, the patent issued jointly was invalid).

Another judicial approach which preserved the relationship between co-invention and co-ownership was to consider the employee contributor who provided less to the invention than an assistant who merely improved on the main design. As expressed in 1874 by the Court:

Where a person has discovered a new and useful principle in a machine, manufacture, or composition of matter, he may employ other persons to assist in carrying out that principle, and if they, in the course of experiments arising from that employment, make discoveries ancillary to the plan and preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original principle, and they may be embodied in his patent as part of his invention.²¹

On the other hand, courts found inventorship for the employee when he made a substantial and separate invention from his employer. “[P]ersons employed . . . are entitled to their own independent inventions, . . . if the suggestions communicated [to the employer] constitute the whole substance of the improvement. . . .”²² Thus, early courts held that either party could be the inventor and the alternate party the assistant, but early courts rarely held more than one party could jointly share co-inventorship of the patented invention.

There was another judicially acceptable alternative which preserved the strict relation between coinvention and co-ownership for the situation where one co-inventor contributed in a different way to different elements of an invention than did another. The subject matter was expected to be divided into separate inventions, each invention limited to the elements that were the subject matter of the substantial simultaneous contribution of all co-inventors named. Even here the preference was for a single inventor for a single invention. As one court stated, “If . . . one person invents a distinct part of a machine, and another person invents another distinct and independent part of the same machine, then each should obtain a patent for his own invention.”²³ Thus, when the plaintiff and defendant separately and independently invented several parts of the machine, capable of a distinct use, then those parts might be

21. *Collar Co. v. Van Dusen*, 90 U.S. 530, 563-64 (1875).

22. *Id.* at 564.

23. *Worden v. Fisher*, 11 F. 505, 509 (C.C.E.D. Mich. 1882) (finding that one element in the patent was properly considered the sole contribution of one co-inventor, but was useless without the contributions of the other co-inventor, and affirming the co-inventorship status of the patentees).

considered as separate inventions, for which each inventor could be entitled to a separate patent.²⁴

The penalty for violating the rule of simultaneous and substantially equal contribution was harsh. If a patent covering more than one element issued to two co-inventors, one of whom did not contribute to all the elements, then the patent was entirely void and could not be reissued to either inventor. There was no statutory basis to reissue the patent to the co-inventors when it originally was issued to only one inventor.²⁵ The patent Code provided only that:

Whenever any patent is inoperative or invalid, by reason of a defective or insufficient specification, or by reason of the patentee claiming as his own invention or discovery more than he had a right to claim as new, if the error has arisen by inadvertence, accident, or mistake . . . the commissioner shall . . . cause a new patent . . . to be issued to the patentee, or . . . to his executors, administrators or assigns, for the unexpired part of the term of the original patent²⁶

However, this section was constructed as allowing reissue only upon clerical error of the patenting office, since it seemed incongruous to reissue a patent for matter that could not have been patented in the first instance due to an inventor having been joined in error for an element to which he did not contribute.²⁷ “[T]he [Patent] Department cannot, by means of alterations or corrections, confirm or impart validity to a patent which was originally void.”²⁸

The reason for favoring single inventors and requiring a high standard to be named as co-inventor was that every person named to the letters patent enjoyed undivided ownership rights in the patent. It would thus be inequitable to grant undivided rights to all the elements of a patent unless each inventor substantially contributed to all the elements. Under circumstances

that the person named did not invent nor suggest the entire invention, . . . common justice would forbid that any partial aid rendered under such circumstances, during the progress of experiments in perfecting the improvement, should enable the

24. See *Stearns*, 22 F. Cas. at 1181 (1816).

25. *In re Hamilton*, 37 F.2d 758, 759 (CCPA 1930) (even if co-inventor who did not contribute to some of the claims was included in the application for all of the claims inadvertently, patent may not be reissued. Sole remedy is to attempt to file for new patent).

26. 35 U.S.C. § 64 (1868).

27. See *Hamilton*, 37 F.2d at 758-59 (referring to 35 U.S.C. § 64 (1868) *relying on Ex parte Barsaloux*, August 7, 1878, C.D. 1878, 154).

28. *Id.* at 759.

person rendering the aid to appropriate to himself the entire result of the ingenuity and toil of the originator, or put it in the power of any subsequent infringer to defeat the patent under the plea that the invention was made by the assistant and not by the originator of the plan.²⁹

This is circular reasoning which supports a logical paradigm, or at least reasoning based on interdependent principles. At one place in the circle is the proposition that if patent doctrine only allows for equal and undivided cotenancy ownership rights to all the claims of a patent, then, in order to equitably uphold patent statutory law, a court should uphold the validity of only that patent where each person named as co-inventor contributed equally and undividedly to all the claims describing the invention. The converse proposition is conceivable, namely to allow valid issue of patents to co-inventors who did not contribute in the above way, if patent law were to allow provision for unequal and divided ownership rights. However, the converse proposition was not explored, perhaps because the equivalency of property interests in a patent and cotenancy rights in real property was taken as a given. Another way to explain this was that patent law is statutory, staying within the circle of linguistics and logic of joint inventorship equivalency to cotenancy ownership of patent property interests permitted courts to do equity within statutory confines using the strict substantial simultaneous contribution rule.

But the former logical and linguistic circle was used to express the precedential foundation for property rights that arose as a result of coinvention. Each co-inventor acquired undivided rights in all the elements of the whole patent. This made it just and imperative that each co-inventor contribute equally to all the elements of the invention. It was a way to resolve the tension between antipathy toward monopolies, on the one hand, and the sense that at least a single inventor should have rights to the fruits of his creative effort, on the other hand.

The “simultaneous equal contribution to each and every element” rule of co-inventorship carried forward into the twentieth century. Patent applications were denied,³⁰ or issued patents invalidated, simply because all of the named inventors did not contribute to all the claims, or because contributors to some of the

29. *Agawam Co. v. Jordan*, 74 U.S. 583, 603-604 (1868).

30. *See R.K. Le Blond Mach. Tool Co. v. Wickes Bros.*, 23 F. Supp. 371 (E.D. Mich. 1937) (co-inventor could not properly apply for patent with claims which were invented by the other co-inventor). *See also In re Carlson*, 79 F.2d 900 C.C.P.A. (1935).

claims were not named."³¹ In the case of a patent issued jointly to two co-inventors, where one co-inventor did not contribute to some of the claims, the patent was held invalid and incapable of reissue.³² The courts used the strict simultaneous substantial contribution rule frequently as a precedential basis to defeat defenses against infringement actions based on allegations of co-inventor status.³³ Defenses to infringement actions claiming co-inventorship were defeated on grounds of lack of clear and convincing proof. The articulated standard for co-inventorship was that the two inventors collaborated in evolving the patented device and worked together for a common end which was finally accomplished by the contributions and united efforts of both.³⁴ Co-Inventors had to proceed from conception to inventive result by mutual consultations and suggestions, otherwise a court would uphold findings of sole inventorship to defeat defense of co-inventorship.³⁵

There was evidence in the twentieth century of softening of the strict rule. It was more a liberalization of standards than a fabrication of new doctrines, but the effect sought was to balance equities in a new technological era. Thus, instead of fashioning a new doctrine to distinguish property rights of co-inventors from property rights in real property, the courts showed more willingness to uphold findings of patent validity by co-inventors based on liberalized interpretations of the meaning of substantial contribution.

First, the courts lowered the standard for what was necessary to gain co-inventor status. Occasionally, a court would find that the issue was not critical whether there were joint inventors or a sole inventor,³⁶ at least in the instance of amending an application where a

31. See *Wailes Dove-Hermiston Corp. v. Oklahoma Contracting Co.*, 48 F.2d 901 (N.D. Tex. 1931) *aff'd*, 56 F.2d 143 (5th Cir. 1932) (when there are more than one co-inventor, all must apply for a patent); *Bannerman v. Sanford*, 99 F. 294 (2d Cir. 1900) (when a machine was the joint product of two men, who built it together, neither can secure a valid patent as the sole inventor). See generally *Smart v. Wright*, 227 F. 84 (8th Cir. 1915). See also 35 U.S.C.A. § 116 (for more examples). Cf. *Ethicon*, 135 F.3d. at 1469 (a string of cites to cases where the issues of co-inventorship was cited to in the rule of law, but the holdings varied according to the facts).

32. See *Hamilton*, 37 F.2d at 759 (joint patent invalid due to some elements being contributed to only one inventor, and incapable of reissue).

33. See *Pointer v. Six Wheel Corp.*, 177 F.2d 153 (9th Cir. 1949) (in case of a joint invention, patent issued to only one inventor invalid).

34. *Id.* at 157 *relying on* *McKinnon Chain Co. v. American Chain Co.*, 268 F. 353, 360 (3d Cir. 1920).

35. See *Hobbs v. United States*, 451 F.2d 849, 865-66 (5th Cir. 1971).

36. See *American Patent Diamond Dop Co. v. Wood*, 189 F. 391 (C.C.E.D.N.Y. 1911) *rev'd on other grounds*, 198 F. 401 (2d. Cir. 1912) (that one of two joint patentees alone invented certain of the elements of a combination did not invalidate the patent). See also *Haskell*

joint inventor was named in error inadvertently.³⁷ Second, this increased willingness to allow co-inventorship was expressed in a line of cases which upheld that there should be a presumption that the inventors named in an issued patent were correct, even if more than one inventor.³⁸ Third, and related to the second point above, this increased willingness to allow co-inventorship was expressed in more or less the same line of cases requiring proof of misjoinder (and non-joinder) of more or less than the true inventors by a “clear and convincing” standard to invalidate patents.³⁹ Historically, the precedents most frequently used the clear and convincing standard to defeat attempts to invalidate an issued patent. As early as *Agawam*, continuing through a line of cases⁴⁰ into the twentieth century⁴¹ and up to recent years,⁴² the courts have used the clear and convincing standard to defeat patents with co-inventors claiming rights. As one court stated, “[t]he temptation for honest witnesses, who have worked years with a patentee to implement his ideas, to forget whose ideas they were, is very strong. For this reason, it has been well established that joint inventorship must be proven by clear and convincing evidence.”⁴³

However, the courts have displayed in the twentieth century a growing tendency to uphold the validity of a patent with co-

v. *Colebourne*, 671 F.2d 1362, 1366-67 (C.C.P.A. 1982) (“evidence of conception naming only one of true inventive entity. . . [members could] inure to benefit of and serve as evidence of conception by. . . complete inventive entity, whether initially thought to be joint inventors or only considered to be such later upon change of inventorship”).

37. See *Monsanto Co. v. Kamp*, 269 F. Supp. 818 (D.D.C. 1967).

38. See *Jamesbury Corp. v. United States*, 518 F.2d 1384 (Ct. Cl. 1970). See also *Acme Highway Products Corp. v. D.S. Brown Co.*, 431 F.2d 1074 (6th Cir. 1971); *Mueller Brass Co. v. Reading Industries*, 352 F. Supp. 1357 (E.D. Pa. 1972), *aff'd*, 487 F.2d 1395 (3d Cir. 1973); *Lamb-Weston, Inc. v. McCain Foods, Inc.*, 818 F. Supp. 1376 (E.D. Wash. 1993) (once a patent issues it is presumed valid and one attacking its validity based on misjoinder or non-joinder carries burden of establishing improper inventorship by clear and convincing evidence). See also *Stahelin v. Secher*, 24 U.S.P.Q.2d 1513, 1522 (1992) (“evidence of conception naming only one of the actual inventive entities inures to the benefit of and serves as evidence of conception by the complete inventive entity”).

39. See *Garrett Corp. v. United States*, 422 F.2d 874 (Ct. Cl. 1970). See generally *Acme Highway* at 1083; *Stein v. Biocoustics, Inc.*, 177 U.S.P.Q. 680 (D.D.C. 1973); *Congoleum Indus., Inc. v. Armstrong Cork Co.*, 339 F. Supp. 1036 (E.D. Pa. 1972); *Jamesbury* at 1395.

40. See *Washburn & Moen Mfg. Co. v. Beat 'Em All Barbed-Wire Co.* (“The Barbed Wire Patent”), 143 U.S. 275, 284-85 (1892); *Loom Co. v. Higgins*, 105 U.S. 580 (1881).

41. See *Eibel Process Co. v. Minnesota & Ontario Paper Co.*, 261 U.S. 45, 60 (1923).

42. See *Acme Highway*, 431 F.2d at 1083; *Amax Fly Ash Corp. v. United States*, 514 F.2d 1041 (Ct. Cl. 1975) (as a defense against charge of infringement, party alleging co-inventor status defeated on basis of lack of clear and convincing evidence).

43. *Acme Highway*, 431 F.2d at 1083.

inventorship at issue. For example, the court in *Mueller Brass*⁴⁴ was extremely deferential toward upholding co-inventorship. In the face of insubstantial and non-simultaneous contribution to all of the claimed elements by a collaborator named as co-inventor, the court held it unnecessary to invalidate the patent, absent deceptive intent, on policy grounds of doing justice in these circumstances.⁴⁵ As stated by the court, “[t]his situation does make it difficult to say, however, with real certainty, whether or not a given person ‘is’ a joint inventor in a given case. It is a question most often resolved as much on policy as on metaphysics.”⁴⁶

Research in the technological era ran increasingly afoul of the substantial, simultaneous contribution to each element rule. As if not metaphysical enough to define the difference between co-inventorship and sole invention when only one assistant is helping develop the invention, the rule which demanded substantial, simultaneous contribution to each element became qualitatively disjointed from the common reality of modern methods of research in the mid to late twentieth century. Inventions became more complex, partly because market forces made it profitable for ever larger institutions, both corporate and non-corporate, to tackle research and development of ever more complex goods and services. Larger institutions have been successful in developing useful technology using a method organizing compartmentalized and departmentalized research teams to develop different but related technological aspects of complex inventions. These teams not only might not work simultaneously, they may come from different technical backgrounds so that they do not substantially contribute to each element of the complex invention. Corporate research mandated continuing research on an invention despite whether one or another collaborator on an element continued on with the project or even continued employment with the institution sponsoring the research and development. Chemical research, for instance, was fragmented into the organic chemistry of producing the product in a form suitable for use, and, separately, the proof that the chemical produced had utility in use under the conditions for which it was designed. At an extreme, in the drug chemistry niche, the gap between producing congeners and the clinical research to prove utility that was safe and effective enough to satisfy Food and Drug

44. *Mueller Brass Co. v. Reading Indus.*, 352 F. Supp. 1357 (E.D.Pa. 1972).

45. The standard of review to invalidate the patent was clear and convincing proof of invalidity.

46. *Mueller*, 352 F. Supp at 1373.

Administration precautions became enormous, both in terms of talent of the researchers and capital. The historical doctrines of separate patent applications, each naming only those co-inventors who strictly contributed to the limited claims specified, did not meet industry objectives, especially where production and proof of utility were so separate. The original Constitutionally-mandated policy that the patent belongs to the inventor and no one else and the utility of the strict doctrine to deny allegations of co-inventorship to the defense in infringement claims conflicted with industry desires to obtain patent protection for developments that necessitated co-inventors who contributed differently, at different times, to different claims. "If different persons made an inventive contribution to various parts of an invention or to different claims of a patent, the legalistic problems that arose were not readily soluble, even by the complex, expensive, and often confusing expedient of filing separate patent applications on separate claims."⁴⁷ Alternative requirements for co-inventorship could be fashioned which satisfied the needs of modern institutional research without surrendering the policy of incentivizing the inventor, and no one else, that historically supported the strict simultaneous substantially equal contribution doctrine.

III. AMENDMENT OF §116 IN 1984 UPSET THE OWNERSHIP/INVENTORSHIP PARADIGM

In 1984 Congress did fashion an amendment to 35 U.S.C. §116, clarifying the statutory requirement for co-inventorship in a way which "recognizes the realities of modern team research."⁴⁸ As amended in 1984, §116 provides that collaborators may apply for a joint patent even though they did not physically work together or at the same time or did not make a contribution to the subject matter of all the claims, and such an issued patent would not be invalid for lack of fulfilling the strict rule of simultaneous, substantially equal contribution to each and every element.⁴⁹ As stated:

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

47. *Ethicon*, 135 F.3d. at 1469 (Newman, J., dissenting).

48. 130 Cong. Rec. H10525 (daily edition Oct. 1, 1984) (statement of Rep. Kastenmeyer). See also 1984 U.S. Code Cong. And Adm. News, p. 5827 for legislative history and purpose.

49. 35 U.S.C. § 116 (1994). Amendment by Pub. L. 98-622.

patent.⁵⁰

In view of the analysis above, the amendment could be interpreted as a Congressional approval for what was already a judicial trend to relax the strict rule against co-inventorship. Perhaps, Congress was more concerned with acknowledging the realities of modern research in teams, while the judiciary was more concerned with justifying its perceived need for freedom to do justice in particular circumstances within the phraseology imposed by precedents.

However, in amending § 116 Congress did not address the ownership rights that accrued to inventorship in all situations. What was not addressed by Congress, and hence left to the judiciary to interpret, was the foundational correlative upon which the necessity of the strict rules for co-inventorship was built in the first place. The strict rules limiting who had a right to be named as joint inventor grew out of the requirements flowing from the rights granted to patentees. Patentees enjoyed undivided rights in the entire patent. Therefore, only contributors who developed the entire invention in an undivided fashion could rightfully enjoy those rights.

The implications to ownership that resulted from breaking this paradigm at the joint inventor moiety were not considered by Congress because the effects were usually not significant to a large modern research institution for whom the relief from the strict rule for coinventorship was fashioned. A conflict over ownership of discoveries between the institution and employees or contractors would not often arise retrospectively, because everyone and anyone who could possibly lay claim to contribution to a technological development had contractually settled assignment of ownership rights prior to collaboration. Most of the time the joint inventors are all employees of the same organization sponsoring and organizing the research project. Otherwise, in a joint venture between institutions, there is prior assignment and licensing agreements. To institutional research and development entities, it does not matter who gets named to the patent as co-inventor because the institution has been assigned all property rights. The institutional researcher with prior assignment of property rights is only interested that the patent which the institution wholly owns not be invalidated for improper naming of co-inventors based on deceptive intent.

50. *Id.* Note a distinction. From a facial reading of the statute, a patent may not issue if the inventors knew nothing at all about each others work.

To non-institutional inventors who have not prospectively settled ownership rights in discoveries, however, it is critical whether the concept of ownership is necessarily congruent with the concept of inventorship. Courts have recognized the incongruity:

It is elementary that inventorship and ownership are separate issues. . . . [I]nventorship is a question of who actually invented the subject matter claimed in a patent. Ownership, however, is a question of who owns legal title to the subject matter claimed in a patent, patents having the attributes of personal property.⁵¹

The Patent Code does not make the distinction between the issues clear. Instead, the Code seems to conflate the issues. "Subject to the provisions of this title, patents shall have the attributes of personal property."⁵² Inventorship and patent ownership are separate, but interrelated, issues.

Thus, although it does not make a difference when all rights of ownership are vested in one party, it does make a difference when there is not a predetermined agreement concerning the limit of ownership rights and the limits of each patent. This seems to happen in cases where an individual develops an advancement, using more or less the contribution of others with respect to various aspects of the development, without a prior intellectual property policy that anticipates assignment of patent rights.⁵³ The small inventor may not be sufficiently savvy about statutory and court ordered rights of collaborators in his invention to preemptively assign ownership rights.

The amended § 116 ¶ 1 allows for relaxation of the requirements for validity of a patent based on who is named as a co-inventor for the benefit of large institutional research programs, but the amended statute does not relax the harsh results on ownership rights to the small inventor when a collaborator is added to a patent. Section 116 effectively lowers the burden carried by a putative joint inventor to be named to the patent. Lack of substantial simultaneous contribution to each claim is no longer a statutory bar. But while the impediments to becoming a joint inventor have been statutorily lowered, the rights awarded to such a prevailing joint inventor have not been expressly

51. *Beech Aircraft Corp. v. EDO Corp.*, 990 F.2d 1237, 1248 (Fed. Cir. Kan. 1993) (discussing rights of ownership as to vesting giving rise to priority rights in an interference proceeding as shown in 35 U.S.C. §116).

52. 35 U.S.C. § 261 (1994).

53. See generally *Ethicon*, 135 F.3d 1456 (Fed. Cir. 1998), *Pannu*, 155 F.3d 1344 (1998), *Hess*, 106 F.3d 976 (1997).

modified. Even though a newly named joint inventor may not have contributed to a claim or claims of a complex invention, he could obtain undivided rights to all the claims if the established ownership rules, which prior to the amendment of § 116 meshed well with the strict rules of co-inventorship, prevailed.

There are several property rights that accrue to the owner of a patent. The first set of rights flowing from a patent that comes to mind is the statutorily granted right of the holder or joint holders to exclude others from making, using or selling the subject matter of his or their patent during the term of the patent. This right is analogous to the right of exclusion flowing from ownership of real property. Although the right to exclude is statutorily determined, the meaning of co-ownership in patent rights has been court determined. The rights flowing from ownership in real property and patents for co-owners are judicial interpretations which depend for their integrity and fairness on balancing the interests recognized. It is fair to closely correlate co-ownership rights in patents to cotenancy rights in property when co-inventorship is based on substantially equal contribution. Congress has changed the statutory requirements for co-inventorship, but Congress did not address by statute the meaning of co-ownership in a patent where there is the unequal contribution allowed in the amendment, leaving it to the courts to fashion appropriate property law.⁵⁴ It would not be in violation of patent statute or Congressional intent for the court to fashion equitable property rights in patents under the changed code. "Thus, where inventors choose to cooperate in the inventive process, their joint inventions may become joint property without some express agreement to the contrary."⁵⁵ The "may" aspect of this statement is rooted in common law. It makes sense and is just where there has been equal contribution or prior agreement to share the rights in the invention as common property held in co-tenancy. Whether such a conclusion of cotenancy rights in jointly owned property "should" or "must" be drawn in the situation of co-inventors of patents is conceivably open to discussion.

Undivided property rights in all the claims of a patent do not have to flow to each co-inventor as a result of co-inventorship status.

54. The basis for this paradigm shift is based on the amount and quality of contribution in order to ascend to vesting in the associated property interests. The basis for the shift is not the intangible nature of intellectual property as contrasted with the tangible nature of real property and chattel. *But see* dissent in *Ethicon*, 135 F.3d 1456, 1470-1471 (Fed. Cir. 1998).

55. *Id.* at 1466.

The rights associated with concurrent ownership in intellectual patent property are not congruent with rights associated with concurrent ownership in tangible property; there are comparisons and contrasts in existing law.

There are several ways to express property rights in tangible property: sole ownership,⁵⁶ tenancy in common,⁵⁷ joint tenancy,⁵⁸ and tenancy by the entirety.⁵⁹ Some principles of real property rights do not analogously transfer neatly to patent intellectual property, such as the doctrine of adverse possession. The owner of a patent does not lose any rights as a result of his not using the patent when another infringes the patent in open defiance of the true owner.⁶⁰ Some doctrines of real property rights have not applied to patents, such as the abandoned fee tail estate of possession.⁶¹ Similarly, the common law rules of severance as applied to tenancy in common were never applied to rights of patentees in concurrent ownership of a patent. There is no procedure for co-owners of a patent to apply to a court to divide up their ownership interests as there is for real property.

The courts could properly and equitably use most of the tenancy in common model of property rights as long as the rights awarded co-patentees closely approximated the contributions that each co-inventor made to the invention. Amendment of § 116 changed the

56. A sole owner in real property has undivided rights of exclusion, possession, use, and title rights. Compare the corresponding rights of ownership of real property to ownership in patent property: the owner of real property has the right of exclusion, while the owner of patent property rights likewise has the analogous right to exclude others from making, selling or using his invention. Contrast the corresponding rights of ownership of real property with ownership in patent property: the owner of real property has the rights to use and possess, while the owner of patent property right lacks the right to himself make, use or sell.

57. Each co-tenant in a tenancy in common has an undivided interest in the property, including the right to possession of the whole. When one co-tenant dies, the remaining tenants in common have no survivorship rights. *See generally* Jesse Dukeminier & James E. Krier, *Property*, 326-327 (3d. ed. 1993)

58. Each co-tenant in a joint tenancy has an undivided interest in the property, including the right to possession of the whole. When one co-tenant dies, the remaining tenants in joint tenancy has the right to the whole estate. Interests in joint tenancy can be severed, creating a tenancy in common. Contrast to corresponding rights in patent: upon death of one co-patentee, the remaining co-patentee does not succeed to the property rights of the deceased co-patentee. *See id.*

59. Each co-tenant in a tenancy by entirety has the same rights as in a joint tenancy, except that severance by one tenant is invalid. (This tenancy can be created only as between husband and wife.) *See id.*

60. Compare the intellectual property of trademark. Disuse of a trademark results in loss of rights, although use of a trademark adverse to the rightful mark holder does not dispossess him of his mark.

61. Fee tail estate of possession. Upon death of the owner, complete ownership of the estate passes to the eldest male heir.

last part of that paradigm. A holding of undivided and equal rights in all the claims makes better equitable sense the more closely there is equal contribution to each element of the claimed invention. At the other end of the spectrum, divided and unequal rights in the patent make better equitable sense the more the co-inventors' contributions are different, as can be the circumstances under current patent law.

IV. UNDIVIDED CO-OWNERSHIP DEPENDS ON SUBSTANTIAL CO-INVENTORSHIP

At one level, statute expressly creates or implicitly authorizes ownership of monopolistic rights in a patent. At another level, courts interpret the meaning of ownership rights in the context of patent concurrent ownership in accordance with the perceived intention of Congress. As expressed by the Supreme Court in 1850:

[T]he monopoly granted to the patentee is for one entire thing; it is the exclusive right of making, using, and vending to others to be used, the improvement he has invented, and for which the patent is granted. The monopoly did not exist at common law, and the rights, therefore, which may be exercised under it cannot be regulated by the rules of the common law. It is created by the act of Congress; and no rights can be acquired in it unless authorized by statute, and in the manner the statute prescribes.⁶²

With respect to the relationship between a single inventor-assignor and a single assignee in assignment of ownership interest, joint ownership was upheld along a tenancy-in-common model.

By the eleventh section of the Act of 1836, the patentee may assign his whole interest, or an undivided part of it. But if he assigns a part under this section, it must be an undivided portion of his entire interest under the patent, placing the assignee upon an equal

62. *Gayler v. Wilder*, 51 U.S. 476, 493 (1850). For a line of authorities analyzing some of the implied rights that a patentee acquires, *see also* *Bloomer v. McQuewan*, 55 U.S. 539, 548 (1852) (when patentee grants unrestricted license, he gives undivided interest in monopoly for the term of the patent, as extended by statute); *Patterson v. Kentucky*, 97 U. S. 501, 503 (1879) (patentee granted rights by federal statute with reference to general powers which the states possess over their purely domestic affairs whether of internal commerce or of police); *United States v. Bell Telephone Co.*, 167 U. S. 224, 249 (1897) (at a time when the term of the patent was for seventeen years after issue, a fourteen year delay on the part of the Patent Office, government may not reduce the right to term of the patentee); *Bement v. National Harrow Co.*, 186 U. S. 70, 90-92 (1902) (patentee has right to restrict license to one licensee and restrict the terms under which products may be made and sold, and not in violation of anti-trust) ; *Continental Paper Bag Co. v. Eastern Paper Bag Co.*, 210 U. S. 405, 424-425 (1908) (patent absolute property of inventor, in context that inventor need not put patent to use to enjoy property rights for the term of the patent).

footing with himself for the part assigned. Upon such an assignment, the patentee and his assignees become joint owners of the whole interest secured by the patent, according to the respective proportions which the assignment creates.⁶³

There is reason for granting undivided rights in the setting of assignation of patent rights.

[I]t was obviously not the intention of the legislature to permit several monopolies to be made out of one, and divided among different persons within the same [geographic and temporal] limits. Such a division would inevitably lead to fraudulent impositions upon persons who desired to purchase the use of the improvement, and would subject a party who, under a mistake as to his rights, used the invention without authority, to be harassed by a multiplicity of suits instead of one, and to successive recoveries of damages by different persons holding different portions of the patent right in the same place.⁶⁴

In the areas of licensing, assignment or transfers of patent rights, and dependent infringement actions, the concept of undivided fractional shares of co-owners of the patent rights makes good equitable sense.

Cases which have been read as requiring undivided rights of the co-patentees where there was no contractual assignment can be distinguished. These cases equitably balance interests of the co-owners as long as the circumstances are limited to situations where the co-inventors did not make substantially different contributions. “[T]he law of shared ownership was founded on shared invention, a situation that . . . does not here prevail [the situation of a left out co-inventor being declared co-inventor].”⁶⁵

Concerning a defense to infringement based on allegations of lack of sole inventorship by the patentee, the court in *Agawam* held that there must be a high degree of disparity between the contribution of the putative co-inventor compared to the patent holder in order to invalidate the patent:

Suggestions from another, made during the progress of such experiments, in order that they may be sufficient to defeat a patent subsequently issued, must have embraced the plan of the improvement, and must have furnished such information to the person to whom the communication was made that it would have

63. *Gayler*, 51 U.S. at 493.

64. *Id.* at 493-494. *Cf.* *Bloomer*, 55 U.S. at 542 as to term of reissued patent.

65. *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1472 (Fed. Cir. 1998).

enabled an ordinary mechanic, without the exercise of any ingenuity and special skill on his part, to construct and put the improvement in successful operation.⁶⁶

This was because the court felt constrained to only consider sole inventorship under circumstances of contributions that were not so high.

Such a defense cannot be successful unless it is proved, as common justice would forbid that any partial aid rendered under such circumstances, during the progress of experiments in perfecting the improvement, should enable the person rendering the aid to appropriate to himself the entire result of the ingenuity and toil of the originator, or put it in the power of any subsequent infringer to defeat the patent under the plea that the invention was made by the assistant and not by the originator of the plan.⁶⁷

The court did not reach the issue of whether it could have granted partial relief under a paradigm of law which more easily admitted co-inventorship.

Again, the Supreme Court in the late 1800's mandated that the invention had to be owned by a single contributor. This contributor could be the principal employer,⁶⁸ or the employee,⁶⁹ but not both. These holdings as to sole inventorship based on the "whole substance of the improvement" are codependent on the premise of undivided ownership of the patent rights, "because the real invention or discovery belongs to the person who made the suggestions."⁷⁰ Again the Court does not conceive of, and thus does not reach, analysis of co-inventorship based on a possibility of divided ownership rights.

Precedents which dealt with the meaning of co-ownership rights in a patent were factually based on situations where the issue at bar

66. *Agawam Co. v. Jordan*, 74 U.S. 583, 602-603 (1868).

67. *Id.* at 604.

68. *See Collar Co. v. Van Dusen*, 90 U.S. 530, 563-564 (1874). "Where a person has discovered a new and useful principle in a machine, manufacture, or composition of matter, he may employ other persons to assist in carrying out that principle, and if they, in the course of experiments arising from that employment, make discoveries ancillary to the plan and preconceived design of the employer, such suggested improvements are in general to be regarded as the property of the party who discovered the original principle, and they may be embodied in his patent as part of his invention."

69. *Id.* at 564. "[An employee is] entitled to [his] own independent inventions, and if the suggestions communicated [by an employee to the employer] constitute the whole substance of the improvement the employee is entitled to the invention and the patent if granted to the employer is invalid, because the real invention or discovery belongs to the person who makes the suggestions."

70. *Id.* at 564.

was assignments and transfers, so that it was not necessary to reach issues of joint ownership. For example, the Supreme Court held in *Washburn* “[t]he language of the patent act, of 1836 . . . refers to the grant of an exclusive right in a patent, and the term ‘exclusive’ comprehends . . . an exclusive right to the whole patent The action for the violation of an exclusive right is confined to the owner of such a right.”⁷¹ In *Washburn* the issues were whether the ownership rights of a vested grantee of a patent owner survived the death of the owner, and whether ownership of the granted rights were exclusive and undivided. Although in *Ethicon*, the Federal Circuit took an expansive reading of the text to apply to co-ownership situations where strict co-inventorship was absent,⁷² the *Washburn* statements are made in a context that restricts their applicability to situations where there is strict single party inventorship and ownership. The holdings prior to the 1984 amendment to § 116 assume a paradigm of codependency between strict requirements for a single inventor and sole ownership of patent rights, and make sense when read in a restrictive sense. But in order for the inventor to sue, the assignment must undoubtedly convey to him the entire and unqualified monopoly which the patentee held in the territory specified — excluding the patentee himself, as well as others. Any assignment short of this is a mere [nonexclusive] license.⁷³

The predecessor court to the Federal Circuit expressed in dictum a desire for more flexibility in dealing with the scope of ownership rights of co-inventors when assignment or granting is not at issue.⁷⁴

Specifically, the court stated:

[O]ur presumption was that the situation might have been taken care of by some proper procedure in the Patent Office during the pending of the original application, and, it may be added, we should feel that justice would be served if the reissue statute admitted the relief which appellant prays.⁷⁵

V. OPTIONS FOR DEALING WITH CO-INVENTORSHIP/CO-OWNERSHIP DISJOINT

If inventorship and ownership are separable issues, then co-

71. *Washburn*, 29 Fed. Cas. at 316.

72. See *Ethicon*, 135 F.3d at 1460.

73. *Gayler v. Wilder*, 51 U.S. 477, 494-504 (1850).

74. See *In re Hamilton*, 38 F.2d at 889, 890 (CCPA 1930) *petition for rehearing denied*, 37 F.2d 758.

75. *Id.*

inventorship and concurrent ownership in the patent should be even more separable. In other words, the rights of the model for joint tenancy in real property need not be strictly analogized to joint ownership in a patent, especially the rights of tenants in common to undivided rights. It would be in the interest of integrity and equity for courts to have freedom to fashion relief for the left out co-inventor that is not restrained by concepts of common law real property rights. Assuming that a court is not bound to apply rights of cotenants of real property to co-owners of a patent, there are multiple options for relief available for the court when it finds substantially unequal contribution to some of the claims of a patent. Some options have precedential history to recommend them. Others can be distinguished from precedent after the amendment of § 116.

A. *Invalidate All the Claims of the Patent*

The first option is for a court to continue the practice of invalidating the entire patent when there is a dispute as to co-inventorship and when the left out party sustains the burden of proof of inventive contribution to at least one claim. By exercising this option the court would give strict interpretation to the word "shall" in § 116 as meaning contributors to the invention must apply jointly to benefit from the reduced restrictions on the substantial equality of contribution afforded by § 116. Where the co-inventors failed to apply jointly and there has not been a prior resolution of ownership rights between them, the court would be giving interpretation to the words "shall not" in § 256 ¶ 2 as meaning that a patent cannot be equitably corrected under § 256 by granting cotenancy rights where there is substantial disparity between contributions.⁷⁶ Holding the entire patent invalid can be more harsh on both co-inventors than granting undivided rights to all co-inventors because in the latter situation there are two entities sharing the monopoly, while in the former situation the monopoly advantage is denied to all contributors. However, the two inventors may be able to apply for new patents covering the subject matter but severing the claims. The helpfulness of this recourse is limited. Even if the inventors are not barred by other patent law, particularly the bars of 35 U.S.C. § 102, such

76. See *Collar Co.*, 90 U.S. at 562 (original patentee was not entitled to a patent either for the paper or the process, as he never made sufficient invention or discovery upon the subject). See also *Stewart*, 32 F. at 666 (joint patent on machine composed of twelve independent claims, one claim having been found to be the invention of one joint patentee only, found invalid as to all claims).

recourse may not result in loss of some of the subject matter to either or both of the co-inventors. One possible scenario which would prevent subsequent patentability would be where both applicants' patents simultaneously suffer from a 35 U.S.C. § 102(e) or (g) priority bar.⁷⁷ It would always be the case that the co-inventors would not qualify for the 35 U.S.C. § 103(c) exception, as this exception is available only for co-inventors who assigned rights to the same party at the time of invention.⁷⁸ Each patent application must satisfy all the requirements for patentability. Thus, severance of claims and applications for the severed claims might not be equitable.

B. Sever the Claims of the Patent, Retaining the Undisputed Claims

The second option is for a court to sever the claims rendered invalid due to error of named inventors. The claims in which the sole inventor was correctly named would retain validity and the owner would be the sole inventor. The claims in which the co-contributor was left out would be invalidated. In a case where severance of claims was realistic, the predecessor court to the Federal Circuit expressed a desire to do so, and order reissue for valid claims.⁷⁹ However, such a court-ordered invalidation of part of the patent with validation of other claims of the patent, whether achieved through reissue or some other mechanism, would still be subject to the logic that invalidating part of the patent invalidates the entire patent. If there are claims that are patentable, they can only be patented by the procedures of the PTO reexamination, reissue, or new application.

77. 35 U.S.C. § 102 (1994) "Conditions for patentability; novelty and loss of right to patent.

A person shall be entitled to a patent unless . . .

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, . . .

(g) before the applicant's invention thereof the invention was made in this country by another. . . ."

78. 35 U.S.C. § 103 (1994) "Conditions for patentability; . . .

(c) Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person."

79. See *Hamilton*, 37 F.2d at 758 ("Justice would appear to warrant the reissue as requested but reissues must be granted within the provisions of the statute.").

C. Sever the Claims of the Patent, Subjecting the Valid Claims to Reissue

The third option is for the court to hold the claims found to be joint invention invalid. With respect to the undisputed claims, the patentee could surrender the patent to the Patent Office for reissue proceedings pursuant to 35 U.S.C. § 251:

Reissue of defective patents: Whenever any patent is, through error without any deceptive intention, deemed wholly or partly inoperative or invalid, . . . by reason of the patentee claiming more or less than he had a right to claim in the patent, the Commissioner shall, on the surrender of such patent . . ., reissue the patent for the invention disclosed in the original patent . . . for the unexpired part of the term of the original patent. No new matter shall be introduced into the application for reissue.

The Commissioner may issue several reissued patents for distinct and separate parts of the thing patented, upon demand of the applicant. . .

The provisions of this title relating to applications for patent shall be applicable to applications for reissue of a patent, except that application for reissue may be made and sworn to by the assignee of the entire interest if the application does not seek to enlarge the scope of the claims of the original patent.⁸⁰

This provision of the Code for reissue could equitably resolve the situations where the co-invented claim is independent of the solely invented claim, and all the claims are capable of reissue to the patentee or reissue to the co-inventors. Each patent sought to be reissued must satisfy all the requirements for patentability, including co-inventorship issues. Thus, again, in circumstances where the claims at issue are not capable of severance and separate patenting, there may not be an equitable solution.

The effect of the above choices on the parties and the relationship of the PTO is practically the same. When the remedy of invalidating the patent is used by the court, the incidence of harshness falls when inventors and co-inventors cannot negotiate and agree to reapply for separate patents and cross license rights among themselves. For example, the patentee can volunteer to disclaim disputed claims.⁸¹ Although there are no cases involving disclaimer

80. 35 U.S.C. § 251 (1994).

81. 35 U.S.C. § 253 (1994) "Disclaimer. Whenever, without any deceptive intention, a claim of a patent is invalid the remaining claims shall not thereby be rendered invalid. A

of the disputed matter involving a § 256 defense/attack after the amendment of § 116, it would seem that the owner of record could effect statutory disclaimer, absent deceptive intent. After a court ordered addition of a left out co-inventor, it is unsettled whether an owner of the sectional interest of the undisputed claims could disclaim the claims that were the subject matter of coinvention. Tactically, it would seem that if the disputed claims form a commercially unimportant element of the larger patent, the sole patentee would more safely protect the more important and undisputed part of his patent by disclaiming the disputed elements. In order to retain rights in the disputed elements and to retain the possibility of windfall benefits of rights in the entire patent, the putative co-inventor would seek to block disclaimer by arguing deceptive intent on the part of the patentee seeking disclaimer.

D. Add the Left Out Co-Inventor and Grant Him Undivided Rights in All Claims

The fourth option is for a court to preserve validity of the patent, but order correction of the named inventors to include the left out co-inventor and grant equal and undivided ownership rights to each copatentee.⁸² This action would be pursuant to 35 U.S.C. § 256:

Correction of named inventor: . . . 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.⁸³

The problem with this choice is that the left out co-inventor who has been granted undivided rights in all the claims of the patent has a tremendous windfall in terms of enhanced rights. This encourages attacks on the patent by marginal contributors. The losing patentee is denied the option to disclaim or amend the claims of his own patent because he no longer is the sole owner of the patent rights. On the other hand, the extent of ownership rights to the losing patentee are established and limited by statute. If Congress has not expressed an

patentee, whether of the whole or any sectional interest therein, may . . . make disclaimer of any complete claim.”

82. See *Ethicon*, 135 F.3d at 1465-66.

83. 35 U.S.C. § 256 (1994). See also 37 C.F.R. § 1.324 (1998). Correction of inventorship in patent.

intent to define ownership rights with respect to named inventor and newly-named co-inventor different from the equal and undivided rights of tenancy in common, a court would not be obligated to expand the rights of the losing named inventor at the expense of the rights of the newly named inventor.

E. Limit Undivided Rights of the Newly Named Co-Inventor to the Claims to Which He Contributed

The fifth option is for a court to preserve the validity of the patent, but limit undivided rights to the left out co-inventor to just those claims, or elements within claims, to which he contributed. First, the precedential history cited above which grants undivided co-ownership rights to every named co-inventor is limited to cases in which substantial, simultaneous contribution to each and every claim applies. In situations where there are different contributions to independent claims, as now allowed by the amendment to § 116, the precedential history cited does not preclude other apportionment of ownership rights between the co-inventors named under the new scheme. Courts are empowered to correct inventorship by naming the left out co-inventor to the patent, but are not required to grant rights in every claim, by construction of the word "may" in 35 U.S.C. § 256. A court is empowered by this section to direct correction of co-inventorship in proper cases.⁸⁴ Policy considerations of perceived judicial equity and integrity of the patent system argue for balanced realignment of rights between the patentee and the left out co-inventor. This would allow the co-inventors to bargain among themselves about the value of the co-invented claims. If the coinvented claim is important to the whole invention, then the value of the newly added co-inventor right reflects this. If the coinvented claim is not important to the rest of the claimed invention, then the value of the newly added co-inventor's ownership right is marginal. There is less ability on the part of the newly named co-inventor to reap windfall value by ownership rights to claims to which he did not contribute under this option.

F. Grant Ownership Right Only to the Named Inventor and Give the Left Out Co-Inventor Damages

The sixth option is for a court to preserve the validity of the patent, naming the left out co-inventor to the list of co-inventors.

84. See *St. Regis Paper Co. v. Bemis Co., Inc.*, 403 F.Supp. 776 (S.D. Ill. 1975).

However, instead of granting undivided property rights, the court would grant remedy in the form of damages based on an appraisal of the value of the left out co-inventor's contribution to the whole invention. If the analogy of the property rights of joint inventors to the property rights of tenants in common no longer works justice in particular situations, perhaps new jurisprudence analogous to nuisance or implied contract would serve this situation better.⁸⁵ Remedies are provided in the Patent Act for infringement: 35 U.S.C. § 284:

Damages. Upon finding for the claimant the court shall award the claimant damages adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer, together with interest and costs as fixed by the court. A court may consider constructive reverse infringement of the co-inventor's contribution by the patentee, and award compensation commensurate with the co-inventor's contribution.⁸⁶

G. Grant Ownership Right Only to the Left Out Co-Inventor and Give the Named Inventor Damages

The seventh option is for the court to grant ownership rights to the party most likely to economically exploit the invention, even if the party was the co-inventor who contributed less. With this option the court would distribute the commercial benefits of the patent to the inventors and co-inventors in proportion to the importance of the contribution of each. This would bring about efficient resource allocation under circumstances where the named inventor contributed to most of the invention, but he did not have as much ability to exploit

85. See generally R.H. Coase, *The Problem of Social Cost*, J.L. & Econ. 1 (1960). Coase Theorem hypothesizes that the market will move the right to the use of highest economic value. The court makes an initial allocation of rights as a combination of injunctive and damage relief based on economic and other judicial considerations to maximize the social value of the right. However, in patent property cases the initial allocation of rights will probably not transfer in a way that maximizes the policy goal of patent law to advance technology through invention. The named inventor has already determined to invest in his holdout position over negotiating a license. The left out inventor has tremendous incentive to invest for a potential free ride on the claims of the patent to which he did not contribute invention. When transaction costs are so high, injunctive relief does not lead to negotiated resolutions that reflect maximization of social value. That is, granting property rights to the newly named co-inventor to claims to which he did not contribute does not promote the policy goal of patent law. It promotes litigation. Leaving the ownership right to all the patent claims with the named inventor, while giving damage remedy to the newly named co-inventor, would more appropriately allocate rights in this situation, initially and ultimately.

86. 35 U.S.C. § 284 (1994).

his ownership rights as the newly named co-inventor. The named co-inventor would get the possible benefits of his invention. This would maximize social value of technological progress by putting the resource of inventions to their most valuable use. The court can be most economically efficient by minimizing economic inertia caused by high transaction costs when it initially allocates the benefits incident to invention in a way that the parties would most likely structure, absent the friction of patent transaction costs. That would place most of the incidents of ownership in the hands of the entity most able to exploit the invention, while compensating the party who has relinquished ownership rights with economic benefit that he would not have been able to realize anyway. However, when the conflicting parties are competitors with similar interests and market capabilities, this option may not be feasible for a court.

H. Grant Undivided Rights to Claims Not Contributed To, But Keep a High Standard To Find Co-Inventorship for the Claims That Were Contributed To

The eighth choice is for a court to grant undivided ownership right to claims that were not contributed to, but to display more reluctance to name a left out contributor of minor claims to a patent in cases where the left out co-contributor would get ownership rights in more claims than to those to which he contributed.⁸⁷ As discussed above, the standard for co-inventorship is interrelated with the scope of the rights granted to co-inventors.⁸⁸ With a higher standard for the left out co-inventor who contributed to a minimum of the claims, when there is such a disparity between what may be granted and what was contributed, the loss of ownership right would fall upon the party contributing substantially less to the whole invention. Although this may be the practical judicial response to what is an otherwise Draconian rule, it may prove difficult for a court to use the standard of co-inventorship/assistantship as a proxy to allocate ownership rights in complex patents.⁸⁹

This is an exhaustive list of options available for a court when it allocates ownership rights of a left out collaborator. Once

87. See *Ethicon*, 135 F.3d at 1468-69 (Newman, J., dissenting). Cf. *Hess v. Advanced Cardiovascular Systems, Inc.*, 106 F.3d 976, 981 (Fed. Cir. 1997) (named inventor spared co-ownership on grounds putative co-inventor did not meet standard of conception necessary to constitute co-inventorship).

88. *Supra*, Section I, Background of Co-Inventorship.

89. See *Pannu*, 155 F.3d 1344 (arguably conclusory dictum in defense of the named inventor).

interdependency of the scope of co-inventorship and the scope of patent ownership rights is recognized, then admitting the possibility of modifying the cotenancy model of property rights for co-owners of a patent, after the paradigm shift caused by the amendment of § 116 for co-inventors who did not previously agree to assignment of ownership rights, results in more than one bright-line option for the scope of award of property rights to the left out co-inventor who gets let in to the patent by a court.

VI. THE OPTION EXERCISED

In deciding *Ethicon*, chronicled in the introduction to this article, the Federal Circuit chose to exercise the fourth option above.⁹⁰ *Ethicon* is the leading case after the 1984 amendment to 35 U.S.C. § 116 to adjudicate the extent of ownership rights for a newly named co-inventor. The complex surgical instrument at issue was the subject matter of fifty-five patent claims. The district court found that the left out co-inventor had contributed invention to two of the claims.⁹¹ The possibilities for the manufacturers of the surgical instrument were invalidation of the patent, which would initially remove the monopoly for all parties, granting undivided rights to the left out co-inventor, which would leave only two manufacturers with monopoly rights, and apportion of the benefits relative to contribution to important claims.

The two-member majority held that there was sufficient evidence to not overturn the District Court finding that co-inventorship existed for some of the claims.⁹² This co-inventorship status entitled the newly named co-inventor to undivided rights in all of the claims of the patent, including the claims to which he did not contribute. Both the named inventor and the newly named co-inventor must join to pursue an infringement claim. Since the infringement claim at issue was against the engineer's assignee, the infringement suit was dismissed for lack of joinder of all cotenants of the ownership right.

The majority's analysis was relatively straightforward. While recognizing that questions of patent ownership are distinct from questions of inventorship, the majority alluded to provisions in the patent Code as interpreted by precedential holdings to justify their presumption that each co-inventor "owns a pro rata undivided interest in the entire patent, no matter what their respective contributions."⁹³

90. *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1465 (Fed. Cir. 1998).

91. *Id.* at 1461-1462.

92. *Id.*

93. *Id.* at 1465-66.

The majority relied on § 116 “[joint inventors] do not [need to] contribute to the subject matter of every claim of the patent,”⁹⁴ § 261 “patents shall have the attributes of personal property,”⁹⁵ and § 262 use of “joint owners”⁹⁶ to conclude that “a joint inventor as to even one claim enjoys a presumption of ownership in the entire patent.”⁹⁷ Thus, this case stands for the rule that after amendment of § 116, a left out “co-inventor of only one claim might gain entitlement to ownership of a patent with dozens of claims.”⁹⁸ The majority examined no further whether it was equitable or within the intent of Congress to correct inventorship of an issued patent by adding a co-inventor to undivided ownership who did not have the traditional attribute of substantial simultaneous contribution to each claim of the patent.

Further analysis raises the questions posed above. Although § 261 provides for patents to have attributes of personal property, the statute does not make explicit an exhaustive list of those attributes which shall apply to patents. As analyzed above, case law presents the proposition that patent ownership rights include the undivided interest attribute of concurrent ownership in property held as tenants in common, but only in the traditional context of substantial collaboration to each element of the invention.⁹⁹ This distinguishes the precedential history from the circumstances in the case at bar. Besides failing to specify which attributes of ownership accrue to a patent held by co-inventors, §261 is explicitly concerned with assignments, transfers, and notice, and not undivided interests in the context at issue. Further §262 provides as to joint owners: “In 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.”¹⁰⁰ In relying on the literal reading of this section, the majority relied on its underlying assumption of the equivalence of invention and patent ownership. Thus, the majority holding in *Ethicon* chose the model of undivided rights, but the minority

94. 35 U.S.C. § 116 (1994).

95. 35 U.S.C. § 261 (1994).

96. 35 U.S.C. § 262 (1994).

97. *Ethicon*, 135 F.3d at 1466.

98. *Id.* (dictum since the issue at bar is a left out co-inventor who contributed to more than one claim).

99. *See infra*, Part II.

100. 35 U.S.C. § 262 (1994).

recognized that to do so was inequitable, at least without further analysis of the options that were left open to the litigants.

This inequity makes a § 256 attack on the patent a very attractive action for a minor contributor who was not included in the list of patentees and for whom there was no prior assignment agreement. The courts are likely to see § 256 used as a defense against charges of infringement or as an attack to secure co-ownership rights in a valuable patent again. The accused infringer used a § 256 attack in *Pannu* to pursue an even greater advantage, sole inventorship and ownership of the patent at issue.¹⁰¹ Whereas in *Ethicon*, the alleged infringer used a § 256 defense to gain a co-monopoly, in *Pannu* the alleged infringer attempted to combine a § 256 defense with claims of a §102(b) violation¹⁰² to claim sole ownership of the patent. Echoing the circumstances in *Ethicon* of a single inventor developing a complex medical device seeking input without prior assignment of patent right agreement, an eye surgeon developed a complex surgical device. The claimed device was an intraocular lens intended to be inserted into human eyes after cataract removal. The invention was directed at solving the problem of iris tissue snag on the lens stabilizing structures which was encountered during insertion of the lens into the eye.¹⁰³ An intraocular lens manufacturer, interested in constructing this device from a single piece of plastic, suggested manufacturing the surgeon's particular intraocular lens as a one piece unit. The patent issued to the surgeon reciting eleven claims. In addition to the core of the invention, the structure of the intraocular lens that enabled snag free insertion and stable placement, the claims recited elements of "one piece construction," with "uninterrupted, continuously, smoothly curved outer periphery," which were "integrally formed," "said flexible elements and said snag-resistance means [being] made from a clear material," with "said elements defin[ing] a continuously curved arc."¹⁰⁴ The problem with the claims

101. *Pannu v. Iolab Corp.*, 155 F.3d 1344 (Fed. Cir. 1998).

102. 35 U.S.C. § 102 (1994). Conditions for patentability; novelty and loss of right to patent.

A person shall be entitled to a patent unless . . .

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States."

103. The stabilizing means intended to fix the implant in proper position in the eye (haptics) at the time of the invention were arc-shaped filaments, each of which drilled into the lens (optic) at one end and having a free end which end tended to snag the delicate eye tissue upon insertion and positioning inside the eye during surgery.

104. U.S. Patent Number Re. 32,525. (Claim 10 independently claims a device for

was that they were unnecessarily limited if the only subject matter was the snag free shape of the free ends of the stabilizing means. Either one piece construction or three piece construction (with the hard, clear lens optic being made out of different material than the flexible lens haptics), which was standard in the relevant art at the time, would have satisfied the novelty requirements for patentability. The one-piece element was incidental. The accused intraocular lens manufacturer claimed coinvention based on contribution of the one-piece aspect of the intraocular lens. Rather than settling for co-inventorship of the entire patent, the accused infringer asserted sole invention of the "one pieced-ness" and claimed it was the only novel aspect of the described invention. The manufacturer asserted that the named patentee placed snag resistant haptics into the prior art. The one piece elements constituted a valid patent, for which the manufacturer was the sole inventor. The Court held that the accused infringer's claim to co-inventorship was substantial enough to require that the matter be placed before a jury, but not enough to hold that he was the sole inventor.¹⁰⁵ As a rationale, the court asserted that it was undisputed that the surgeon's contribution to the one piece element was sufficient to require him to be named co-inventor rather than assistant. Further, the court asserted that it was undisputed that the two had collaborated.¹⁰⁶ The problem here is that the court did not need to reach these issues and the analysis appears to be unnecessarily conclusory. There was in the art, at the time of the collaboration, a significant independence between the structure of the surgeon's lens and one piece construction. A reasonable jury could conclude as a matter of fact that the surgeon did not contribute significantly to the one piece construction. There is enough factual basis that the matter should not be decided as a matter of law, but the proponents were barred from presenting that argument.

In unnecessarily issuing dicta on a matter that it inadequately explored in a conclusory fashion, it is possible that the court is attempting to soften the harsh effect of the rule in *Ethicon* on the named inventor in *Pannu*. This is the eighth option, above. That is, in order to protect the patentee from the inequitable erosion of property rights that results from a successful § 256 attack, the court is changing the standard for co-inventorship. In this case it is

measuring internal ocular dimensions that was unrelated to the structure or composition of the intraocular lens device that is the subject matter of the other claims.)

105. *Pannu*, 155 F.3d at 1351.

106. *Id.*

attempting by dicta to ensure as a matter of law the standard for co-inventorship for the patentee is low enough that he will not be disqualified from his own invention. In so doing the court is usurping the role of the fact finder. The effect of the draconian ruling in *Ethicon* may not be limited to its parties; *Ethicon* may be having effects on progeny cases in an effort to re-establish a more equitable balance between the interests of the parties where it is the rule that the cotenancy model of property will be established in every claim for a left out co-inventor.

VII. RESTORING PERCEIVED EQUITY AND ECONOMIC EFFICIENCY

There is a perceived inequity in granting a newly-named co-inventor undivided ownership rights to all the elements of a patented invention, even as to those elements to which he did not contribute. The question is what changes can be made in the patent law system to encourage the judiciary to find more equitable and economic solutions.

First, the judiciary need not feel so constrained by precedent in interpreting the statute under a distinguishable paradigm to equate co-inventorship with concurrent ownership of property, applying all the rules of tenancy in common of real property and chattel. This would free the judiciary to consider naming a left out co-inventor to the patent, but granting remedies other than undivided interest in the property. This would enable Choice 6 above to fashion more equitable remedies.

Second, to allay court reluctance in this area of law that is primarily statutory, Congress should express an intent that the 1984 amendment to § 116 was aimed at easing the co-inventorship restrictions for modern institutional research. Congress should make explicit whether it intends to grant undivided ownership rights in all claims of a patent to co-inventors of minor claims who are subsequently named to the patent.

Third, Congress should extend the exceptional benefits of § 103(c) to collaborators who did not work for the same employer, but were subsequently named as co-inventors pursuant to court order under §256. This would make it more likely that arguing collaborators would seek reissue and reapplication, rather than litigation.

Fourth, the Patent Office should allow reissue proceedings, including correction of inventorship, whether or not litigation is pending. The claims which are not the subject matter of co-

inventorship would be the basis for one divisional application,¹⁰⁷ and the claims which are the subject matter of co-inventorship would form the basis for another divisional application, with correction of inventorship adding the co-inventor to the latter application.¹⁰⁸ Reissue proceedings by the Patent Office that allow correction of inventorship to reflect the 1984 amendment to § 116 would encourage the courts to stay litigation pending reissuance resolving the conflict between the parties. Further, this would encourage disagreeing parties to work out more equitable settlements dividing rights to claims without resorting to judicial intervention.

VIII. CONCLUSION

Concepts of inventorship and patent ownership are separate but interdependent. Co-Inventorship and undivided patent ownership rights comprise a sensible paradigm when there is substantially equal, simultaneous contribution to each claim of the invention by both of the contributing inventors. Congress changed the contribution moiety of the paradigm with the amendment of 35 U.S.C. § 116 in 1984. As amended, § 116 allows for patents to name as co-inventors collaborators who did not contribute at the same time in the same way, to different claims. To not change the ownership moiety of the paradigm in cases where amended § 116 requires addition of a left out co-inventor to the patent results in inequity and economic inefficiency that frustrates the purpose of patent law. A left out co-inventor subsequently named to the patent under amended § 116 obtains the windfall of valuable ownership rights to claims to which he did not contribute. In this situation, courts can rely on precedents for freedom to fashion more equitable and economically efficient relief. Likewise, Congress can statutorily free the courts to grant more equitable solutions. Finally, the Patent Office can modify regulations to facilitate correction of inventorship in reissue proceedings, even if the parties are engaged in litigation.

107. 37 C.F.R. § 1.53(d) (1999). A divisional application is an application for a patentably distinct invention carved out of a pending application (the parent), including reissue, and claiming only subject matter disclosed in the parent application.

108. 37 C.F.R. § 1.48(a) (1999). Correction of inventorship is currently not available under §1.48(b) for a reissue application. This restriction is a reflection of the historical interdependence of inventorship and ownership. Although 37 C.F.R. § 1.45 was amended to reflect the amendment in 35 U.S.C. § 116, Rule 1.48 has not been changed.