Staking Out a Claim for Inventorship: Challenges for the Collaborative Researcher

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Imagine that Professor at the University of Pangea has spent several years researching a method of fabricating photovoltaic cells that may yield substantially increased solar efficiency compared to known solar panels. To Professor's dismay, Professor is not able to overcome the maximum theoretical efficiency level of silicon-based photovoltaic cells. Professor turns to organometallic photovoltaics as an alternative energy-conversion material. Professor corresponds and collaborates with Postdoctoral Fellow, who researches organometallic photovoltaics at the Panthalassa State University. For several years, Professor and Fellow exchange laboratory notes, literature, and research findings on soluble platinum, a low-cost, lightweight organometallic photovoltaic with promising efficiency. Professor then learns that Fellow has filed a patent application directed to solar cells incorporating the soluble platinum, listing Fellow as the sole inventor.

Did Professor contribute "enough" to qualify as an inventor on the application? If so, what would Professor have to show to prove a claim that Professor has the right to be recognized as an inventor on the patent application?

These questions have sparked costly and proof-intensive litigation. And yet, despite waves of litigation on inventorship, a clear picture of what makes an inventor an inventor has yet to emerge.

Inventorship vs. Ownership

In patent law, inventorship and ownership are all too often (particularly by those unfamiliar with patent law principles) considered interchangeable concepts; but, inventorship and ownership are distinct. The Federal Circuit has summarized the differences between inventorship and ownership, stating: "[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."[1]

Ownership of patent rights initially vests in the inventor, who may then transfer those

rights to another. Thus, the inventor may be the owner of the patent or may assign any interest in the patent to a third party. Conveyances of ownership may be performed through voluntary transfers, such as assignments of interests, or through mandatory transfers, such as employment or contractor agreements. Ultimately, ownership is a creature of state law, concerning only who owns legal title.

Unlike ownership, a contract cannot supersede inventorship. While parties may enter into a joint development agreement, joint technology agreement, or some other cooperative endeavor, parties cannot agree or stipulate to inventorship. Inventorship is a distinct concept under federal law—only concerning the conception of the patentable subject matter.

Why Is Inventorship Important?

Inventorship is important for at least three reasons: (1) integrity within the inventive community, (2) ownership rights awarded to inventors, and (3) the validity and enforceability of the patent.

Integrity

Proper attribution of inventorship matters within the inventive community. That community views inventorship as reserved for those individuals who have actually conceived of new and original means for accomplishing a desired goal in the inventors' technological field. Being an inventor is viewed as an intellectual achievement. To align with the values of the inventive community, patent law seeks to bolster inventors' integrity by providing proper attribution.

Ownership

Although ownership initially vests in the inventor(s), an inventor may assign those ownership rights in the patent to another, whether full ownership, an exclusive license, or something less. But as is true with all property rights, a person cannot assign rights the person does not have. Thus, to determine ownership, the identity of the inventors is a threshold issue that must be resolved.

This is important because "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."[2] So, being a named inventor affords an individual the ability to wield powerful rights of ownership in and to the patent. And the ability to transfer ownership of those rights grants those same powerful rights of ownership to another.

Validity and Enforceability

Improper inventorship may render a patent unenforceable or invalid. Unenforceability of a patent is an equitable remedy premised on inequitable conduct or fraud, and a patent is rendered unenforceable if an inventor (or attorney or agent acting on behalf of the inventor) "deliberately misrepresent[s]" that they invented the patent with the intent to deceive the U.S. Patent and Trademark Office (USPTO).[3] Unenforceability also specifically requires a pleading and proof of inequitable conduct.

Theories of invalidity based on inventorship, on the other hand, are premised on the failure of the patent to comply with 35 U.S.C. § 101 and § 115. Specifically, § 101 states that "*[w]hoever* invents or discovers" patentable subject matter may obtain a patent, and § 115(a) provides that an application for a patent must include the inventor's name. While the overall result on unenforceability and invalidity may effectively be the same (i.e., the patent cannot be asserted against the accused infringer), they nevertheless require different pleading and proof.

Standards of Inventorship

Determining "inventorship" centers on determining who *conceived* the subject matter "recited in a claim in [a patent] application."[4] Conception exists when a definite and permanent idea of an invention is known.[5] The Federal Circuit has defined a "definite and permanent idea" as a "specific, settled idea, [and] a particular solution to the problem at hand, not just a general goal or research plan [the inventor] hopes to pursue."[6] Until an inventor can "describe his invention with particularity," the inventor "cannot prove possession of the complete mental picture of the invention."[7]

Conception of potentially patentable subject matter (thus raising the applicable individuals to the level of "inventor") is often not an endeavor pursued by a *single* individual. Often, at least two individuals are involved in an invention's conception. The Patent Act recognizes the reality that inventions are frequently conceived in collaborative settings. Specifically, 35 U.S.C. § 116 provides the following:

> *When an invention is made by two or more persons jointly, they shall apply for [a] patent jointly and each make the required oath, except as otherwise provided in this title. Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.*[8]

In essence, a "joint invention is the product of *collaboration* of the inventive endeavors of two or more persons *working toward the same end* and producing an invention by their *aggregate* efforts."[9] This makes such individuals "co-inventors" on the patent

application.

Claims for Co-Inventorship

Recognizing the murkiness of inventorship in collaborative endeavors and the resulting need to correct inventorship on patent applications, Congress passed 35 U.S.C. § 256, which states that the acting director of the USPTO may issue a certificate correcting inventorship.[10] Such a certificate may issue upon an application by all parties and assignees or in response to an order from a federal district court.[11] However, correcting inventorship is frequently contentious and necessitates substantial corroborating evidence. As a result, obtaining an order to correct a patent application (or issued patent) is no easy feat.

To prove a claim for inventorship, "a party asserting the failure to include an inventor's name on a patent carries a heavy burden to prove its position by *clear and convincing evidence*."[12] To satisfy this high standard, there must be corroborating evidence independent of the putative inventor's testimony.[13] Such corroborating evidence may be third-party oral testimony or physical records, including notes, letters, invoices, notebooks, sketches, drawings, photographs, or prototypes conveying the at-issue subject matter.[14]

The high bar for proving an inventive "contribution" is not the only challenge—questions also remain as to the metes and bounds of a "contribution." Section 116 "sets no explicit lower limit on the quantum or quality of inventive contribution required for a person to qualify as a joint inventor."[15] The rule states that each inventor must generally contribute to the conception of the invention. In fact, a co-inventor need not contribute to every claim of a patent; rather, an inventive contribution to only *one* claim is sufficient.[16]

To concisely define such a "contribution," the Federal Circuit has characterized a joint invention as "simply the product of a collaboration between two or more persons working together to solve the problem addressed."[17] All a joint inventor must do is:

> *(1) contribute in some significant manner to the conception or reduction to practice of the invention, (2) make a contribution to the claimed invention that is not insignificant in quality, when that contribution is measured against the dimension of the full invention, and (3) do more than merely explain to the real inventors well-known concepts and/or the current state of the art.*[18]

While the Federal Circuit has not defined a "significant" contribution to the claimed invention, it has defined what it is not: "merely assisting the actual inventor after

conception of the claimed invention," providing the inventor with well-known principles or state of the art without having a definite idea of the claimed combination as a whole, and simply reducing the inventor's idea to practice using state of the art do not qualify as significant contributions.[19] Ultimately, a "contribution of information in the prior art cannot give rise to joint inventorship because it is not a contribution to conception."[20]

For example, in *Nartron Corp. v. Schukra U.S.A. Inc.*, the Federal Circuit found that a putative inventor failed to provide a significant contribution when he contributed merely a "basic exercise of ordinary skill in the art."[21] There, the Federal Circuit held that because the putative inventor's contribution of an extender for a lumbar support adjuster in the invention was established in the prior art (as it was part of preexisting automobile seats), there was no inventive skill in the incorporation of said extenders in automobile seats.

The opinion in *Nartron* raises questions of whether patentability should factor into whether a putative inventor made a sufficient contribution to conception. Should the courts consider novelty and/or nonobviousness when analyzing a putative inventor's contributions?

Supreme Court Refuses to Clarify Patentability vs. Inventorship

On March 8, 2021, Ono Pharmaceutical filed a petition for writ of certiorari with the U.S. Supreme Court, presenting the following question on joint inventorship: "Whether the Federal Circuit erred in adopting a bright-line rule that the novelty and non-obviousness of an invention over alleged contributions that were already in the prior art are 'not probative' of whether those alleged contributions were significant to conception."[22]

Unfortunately, the Supreme Court denied the petition for writ of certiorari. Notwithstanding this denial, the parties' briefings before the Supreme Court, coupled with an analysis of the Federal Circuit's factual background and legal reasoning, provide insight into the framework of inventorship litigation.

Factual Background and Procedural History

In the 1990s, Drs. Freeman and Wood worked with Dr. Honjo to explore interactions between ligands and receptors on T cells. For several years, these researchers collaborated with one another, exchanging discoveries and results of specific ligand-receptor interactions, holding numerous meetings and conferences, and providing comments and edits to drafts for journal publications.

Freeman and Wood filed a U.S. provisional patent application, disclosing the use of antibodies in cancer therapy. A few years later, Honjo filed multiple U.S. nonprovisional

patent applications, disclosing similar subject matter. Importantly, Honjo's applications did not list Freeman and Wood as co-inventors.

After the Honjo applications issued as patents, Dana-Farber filed suit in district court, requesting to add Freeman and Wood as inventors to the patents. The district court granted Dana-Farber's request, finding that Freeman and Wood made significant contributions to the subject matter in the patents.

Ono appealed to the Federal Circuit, arguing that Freeman and Wood did not contribute to conception in a significant manner, because the patents claimed subject matter that was patentable over Freeman and Wood's provisional applications. The Federal Circuit disagreed with Ono's argument, explaining:

> *[J]oint inventorship does not depend on whether a claimed invention is novel or nonobvious over a particular researcher's contribution. Collaboration and concerted effort are what result in joint inventorship. The novelty and nonobviousness of the claimed inventions over the [prior art] are not probative of whether the collaborative research efforts of [the researchers] led to the inventions claimed here or whether each researcher's contributions were significant to their conception.*[23]

Rather, the test is merely whether an inventor's contribution is not insignificant in quality, when measured against the dimension of the full invention.[24]

Petition for Writ of Certiorari

Ono's petition for writ of certiorari argued that the Federal Circuit erred by not considering whether the researchers' contributions were *patentable*. Otherwise, one only need contribute known or obvious ideas to be considered an inventor. This undermines collaboration, creates windfalls for individuals who merely contributed ideas already in the prior art, and opens the door to fruitless post hoc joint inventorship claims.

Dana-Farber's response countered that the Federal Circuit's guidance does not contravene principles of patent law and should be affirmed for three reasons. First, evaluating patentability will lead to confusion among researchers when collaborating on subject matter that may be in the prior art during the collaboration. Second, focusing solely on novelty and nonobviousness disregards the exchange of ideas and information in a collaborative endeavor. Third, making novelty and nonobviousness the benchmark for inventorship will discourage future collaborative efforts, as researchers will fear that their contributions will be insignificant.

While Ono and Dana-Farber presented interesting arguments and counterpoints, the Supreme Court denied the petition for writ of certiorari, leaving in place the Federal Circuit's test and the ambiguity around what it takes to make a "contribution" to an

invention.

Considerations for the Co-Inventor

Under current law, an evaluation of patentability is not dispositive as to whether a putative inventor made a significant contribution to conception. Considering the current test's more holistic nature regarding the interplay between patentability and inventorship, individuals looking to collaborate, coordinate, and develop inventive technology need to proceed with care and diligence. Particularly, in collaborative endeavors, inventors should proceed with at least the following courses of action:

1. memorializing and formalizing the collaborative endeavor, preferably in the form of a joint-development, -cooperation, or -technology agreement;
2. documenting all correspondence and communications between all researchers, engineers, scientists, and other inventors;
3. routinely recording, storing, or otherwise gathering and organizing notes, findings, results, drafts, prototypes, drawings, sketches, designs, and any materials pertaining to the foregoing; and
4. staying apprised of any intellectual property endeavors intended to be pursued by the fellow collaborators, including patent filings and trade secret portfolio development.

Again, with no patentability metric governing who has a stake of inventorship to the subject matter of the claims, the bar to claiming co-inventorship may be lower than previously believed. Accordingly, to the extent possible, the putative inventor must demonstrate that they did more than merely convey the "state of the art" or explain concepts readily available to one skilled in the art of the invention.

Considerations for the Patent Practitioner

In addition to collaborative inventors, patent practitioners should also be cognizant of inventorship. Patent practitioners should carefully advise their clients on the metes and bounds of inventorship, whether the client is a corporate entity with droves of employed engineers or one of such employed engineers. When advising clients, patent practitioners should address or clarify the following:

1. While a patent applicant may undoubtedly be the *owner* of the alleged invention, the applicant must still verify and confirm any and all individuals who contributed to the conception of the allegedly patentable invention.
2. Mere participants in the implementation of the alleged invention (e.g., laboratory technicians or field-service engineers) are likely not sufficient to warrant a claim for inventorship—an individual must have been engaged in, or substantively contributed to, the conception of the claimed invention.
3. Organizational leaders, such as department heads, lead engineers, or practice

group chairs, do not qualify as inventors on the basis of their status alone—each of these individuals must have substantively contributed to the conception of the claimed invention, beyond mere facilitation or encouragement of experimentation or research.

4. Attribution of individuals on journal publications or peer-reviewed articles may not qualify said individuals for inventorship because attribution within the academic community has a lower threshold than the standard for inventorship on a patent application.
5. Issued claims may differ from claims originally submitted to the USPTO during patent prosecution—accordingly, reviewing each allowable claim, with an eye toward inventorship, is important for maintaining a correct list of named inventors at the conclusion of prosecution.[25]
6. A correct list of inventors on the patent application is a must—to omit a co-inventor is to either risk the validity and/or enforceability of the patent, or enable a third party to claim ownership rights to the claimed invention vis-à-vis a claim for inventorship.

While listing inventorship is a commonplace practice for practitioners when preparing to prosecute an application, engaging in due diligence to determine proper inventorship is necessary. Time spent on the front end scoping out who is an inventor could save a client hundreds of thousands—if not millions—of dollars in costly litigation later.

Conclusion

Despite its simple definition, inventorship remains a murky concept in patent law. It is fact-intensive and necessitates extensive corroborating evidence by the putative inventor. Even more, there is ambiguity to what constitutes a "significant" contribution to the conception of an invention. Unless and until the Federal Circuit, or the Supreme Court, establishes a clearer mechanism through which to evaluate inventorship, inventors in collaborative or joint research settings must be prudent to document and monitor the evolution of their relationship throughout the life of the collaborative endeavor.

Endnotes

1. Beech Aircraft Corp. v. EDO Corp., 990 F.2d 1237, 1248 (Fed. Cir. 1993).

2. 35 U.S.C. § 262.

3. Advanced Magnetic Closures, Inc. v. Rome Fastener Corp., 607 F.3d 817, 828 (Fed. Cir. 2010).

4. Sewall v. Walters, 21 F.3d 411, 415 (Fed. Cir. 1994).

5. Coleman v. Dines, 754 F.2d 353, 359 (Fed. Cir. 1985).

6. Burroughs Wellcome Co. v. Barr Labs., Inc., 40 F.3d 1223, 1228 (Fed. Cir. 1994).

7. *Id.*

8. 35 U.S.C. § 116(a).

9. Kimberly-Clark Corp. v. Procter & Gamble Distrib. Co., 973 F.2d 911, 916 (Fed. Cir. 1992) (quoting Monsanto Co. v. Kamp, 269 F. Supp. 818, 824 (D.D.C. 1967)).

10. 35 U.S.C. § 256(a).

11. *Id.* § 256(b).

12. PHG Techs., LLC v. TimeMed Labeling Sys., Inc., No. 3:05-1091, 2006 WL 2052701, at *6 (M.D. Tenn. July 21, 2006) (emphasis added) (citing Eli Lilly & Co. v. Aradigm Corp., 376 F.3d 1352, 1362 (Fed. Cir. 2004)).

13. Sandt Tech., Ltd. v. Resco Metal & Plastics Corp., 264 F.3d 1344, 1350–51 (Fed. Cir. 2001).

14. *See* Woodland Tr. v. Flowertree Nursery, Inc., 148 F.3d 1368, 1373 (Fed. Cir. 1998).

15. *Aradigm*, 376 F.3d at 1358 (quoting Fina Oil & Chem. Co. v. Ewen, 123 F.3d 1466, 1473 (Fed. Cir. 1997)).

16. Ethicon, Inc. v. U.S. Surgical Corp., 135 F.3d 1456, 1460 (Fed. Cir. 1998).

17. *Fina Oil*, 123 F.3d at 1473 (citing Burroughs Wellcome Co. v. Barr Labs., Inc., 40 F.3d 1223, 1227 (Fed. Cir. 1994)).

18. *In re* VerHoef, 888 F.3d 1362, 1366 (Fed. Cir. 2018).

19. *Ethicon*, 135 F.3d at 1460.

20. *Aradigm*, 376 F.3d at 1362.

21. 558 F.3d 1352, 1357 (Fed. Cir. 2009).

22. Petition for a Writ of Certiorari, Ono Pharm. Co. v. Dana-Farber Cancer Inst., Inc., No. 20-1258, 2021 WL 948595 (U.S. Mar. 8, 2021).

23. Dana-Farber Cancer Inst., Inc. v. Ono Pharm. Co., 964 F.3d 1365, 1372 (Fed. Cir. 2020) (emphasis added) (citation omitted).

24. *See* Pannu v. Iolab Corp., 155 F.3d 1344, 1351 (Fed. Cir. 1998).

25. This is especially important in patent infringement litigation, where information on inventorship for each asserted claim is requested through various forms of discovery tools, including interrogatories.

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Authors

Patterson Intellectual Property, P.C.

Dominic Rota

Dominic Rota is a registered patent attorney at Patterson Intellectual Property, P.C. in Nashville, Tennessee. He prosecutes, enforces, and litigates patent and trademark issues and guides clients to compliance with information security and data privacy standards.

Patterson Intellectual Property, P.C.

Nathan North

Nathan North is a registered patent attorney at Patterson Intellectual Property, P.C. in Nashville, Tennessee. He prosecutes, enforces, and litigates patent issues.