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A Statutory Patent Reversion Period May End the Debate On Employee Inventions, 51 J. Marshall L. Rev. 675 (2018)

Yucheng Wang

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A STATUTORY PATENT REVERSION PERIOD MAY END THE DEBATE ON EMPLOYEE INVENTIONS

YUCHENG WANG

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I. INTRODUCTION

“He who receives an idea from me, receives instruction himself without lessening mine; as he who lights his taper at mine, receives light without darkening me.”

~Thomas Jefferson

Dr. Shukh is a leading scientist in the hardware industry.¹ In 1997, Seagate Technology LLC (Seagate), a leading international corporation in data storage products, recruited him to move to the United States from Belarus.² Dr. Shukh and Seagate executed an Employment Agreement including Seagate's standard At-Will Employment, Confidential Information, and Invention Assignment Agreement.³ During his employment, Dr. Shukh made valuable

1. *Shukh v. Seagate Tech. LLC et al.*, 803 F.3d 659, 661 (Fed. Cir. 2015), *petition for cert. denied*, 136 S. Ct. 2512 (U.S. June 27, 2016) (No. 15-1285).

2. *Id.* Seagate develops data storage product to create, share, and preserve data.

3. *Id.*

contributions and inventions for Seagate as an engineer in the development of magnetic recording heads for hard disk drives.⁴ Dr. Shukh was named as an inventor on seventeen inventions during his employment with Seagate.⁵

However, Dr. Shukh noticed that Seagate did not give him credit on all his inventions.⁶ In 2009, Seagate had to terminate Dr. Shukh due to his confrontational performance at work.⁷ For example, Dr. Shukh had a “three-strike” rule that “he would stop communicating with coworkers who had engaged three times in behavior he considered dishonest.”⁸ He also made frequent accusations of other coworkers stealing his work, and his insistence on receiving credit for his work was criticized by his manager.⁹ Some Seagate employees simply declined to attend Dr. Shukh’s presentation and, by not knowing his proposals, to avoid his accusations.¹⁰ After Dr. Shukh left Seagate, it was hard to find new employment when potential employers knew about Dr. Shukh’s working style at Seagate.¹¹ Dr. Shukh sued Seagate claiming that Seagate did not credit him for his inventions by omitting him as an inventor for six patents and four pending patent applications.¹² He sought ownership interest, financial interest, and reputational interest on those disputed patents.¹³

The Federal Circuit affirmed the district court’s holdings that “Dr. Shukh had no ownership or financial interest in the patents because he automatically assigned all of his inventions to Seagate in his Employment Agreement.”¹⁴ Further, the court remanded the district court’s grant of summary judgment against Dr. Shukh on his claim for correction of inventorship because a genuine dispute of material fact existed on the reputational interest.¹⁵ In mid-March

4. *Shukh v. Seagate Tech., LLC*, 2013 U.S. Dist. LEXIS 41262, at *9-14 (D. Minn. Mar. 25, 2013).

5. *Shukh*, 803 F.3d at 661.

6. *Id.* at 662.

7. *Id.* at 661.

8. *Id.*

9. *Id.*

10. *Id.*

11. After Hitachi, a potential employer, had a discussion with a Seagate employee, “a Hitachi engineer told Dr. Shukh during his interview that he would never find employment at Hitachi with his reputation.” *Id.* at 661-62.

12. Dr. Shukh sued Seagate asserting thirteen claims including claims for correction of inventionship and a declaratory judgment that certain provisions of his Employment Agreement were unenforceable. *Id.* at 622.

13. *Id.*

14. *Id.* In the provision of the Invention Assignment Agreement of the Employment Agreement, Dr. Shukh agreed to “hereby assign to [Seagate] all [his] right, title, and interest in and to any inventions” made while employed at Seagate. *Id.* at 621.

15. *Id.* at 666. “We find there is a genuine dispute of material fact as to whether Dr. Shukh’s negative reputation for seeking credit for his inventions is traceable to Seagate’s omission of Dr. Shukh as an inventor from the disputed patents.” *Id.*

2016, Dr. Shukh petitioned to the U.S. Supreme Court to change the Federal Circuit's interpretation of automatic patent assignments to employers through invention assignment agreements.¹⁶ The Court denied certiorari.¹⁷

Dr. Shukh's case represents a longstanding and ongoing issue regarding employee invention which concerns the ownership of inventions made by an employee.¹⁸ It is undisputed that an inventor is entitled to own his or her invention and to gain interests from it, but the debates come when one invents while under control of an employment relationship.¹⁹ Employers acquire ownership on employee inventions through a pre-invention assignment agreement in an employment contract and profit from the inventions without any compensation to the inventor.²⁰ Inspired by the reversionary interest in the copyright law, Richard Kamprath, an associate in the Dallas office of McKool Smith, proposed a joint ownership patent reversion to solve the conflict among employee inventions.²¹

This comment aims to address the conflict on patent ownership between employers and employee-inventors and to propose a possible solution building upon Kamprath's patent reversion theory. Section II provides the history behind the development of the common law in employee inventions, and in different state statutory enactments. The history of employee invention law reveals that the conflict is the result of the modern corporation-centered economic market. Section II further introduces distinctive legal principles adopted by the U.S. and Germany to adapt such market change in the allocation of employee invention rights. Section III analyzes the advantages and disadvantages on the current legal principles, especially on pre-invention assignment agreements.²² This comment argues that the generic pre-

16. Matthew Bultman, *High Court Urged to Nix 'Automatic Assignment' Patent Rule*, LAW 360 (May 03, 2016), www.law360.com/articles/791930/high-court-urged-to-nix-automatic-assignment-patent-rule.

17. *Shukh*, 803 F.3d 659, *petition for cert. denied*, 136 S. Ct. 2512 (U.S. June 27, 2016) (No. 15-1285).

18. Catherine L. Fisk, *Removing the 'Fuel of Interest' from the 'Fire of Genius': Law and the Employee-Inventor, 1830-1930*, 65 U. CHI. L. REV. 1127, 1128-29 (1998).

19. *Id.* at 1128.

20. *Id.* at 1130-31.

21. Richard A. Kamprath, *Patent Reversion: An Employee-Inventor's Second Bite at the Apple*, 11 CHI.-KENT J. INTELL. PROP. 186, 188-89 (2012); *See generally* Brinks Gilson & Lione, *Copyright*, MONDAQ (Dec. 19, 2014), www.mondaq.com/ac/content.asp?action=login&email_access=on&content_id=1028 (introducing copyright, the concepts of joint work, and allocation of ownership under employment circumstance).

22. A pre-invention assignment agreement is just like the Invention Assignment Agreement included in the Employment Agreement executed by Dr. Shukh and Seagate. *Shukh*, 803 F.3d at 621. It is usually provided by the employer to have the employee pre-assign ownership and interest of any

assignment of rights in employee inventions is the real problem behind the conflict on patent ownership between employers and employee-inventors. Such pre-assignment takes away individual inventors' rights over their general inventions that traditionally belonged to them. Section IV proposes new suggestions built upon Kamprath's idea of patent reversion to balance the parties' bargaining power, and to raise employee inventors' own voices in their general inventions.

II. BACKGROUND

This section starts with identifying the center of the conflict on ownership of employee invention. Then, it lays out the historical development of common law on the allocation of ownership in employee inventions. It further discusses the current practice by employers to acquire patent rights from employee inventors through pre-invention assignment agreements, and courts' and legislatures' reactions to such agreement. Lastly, this section briefly introduces the German approach to allocate employee invention ownership and Richard Kamprath's idea of a patent reversion modeled after the reversionary interest in copyright law.

A. *The Conflict*

“All creation is a mine, and every man, a minor.”²³ It is a well-established thought that an invention belongs to its inventor.²⁴ As early as in the 18th century, Abraham Lincoln recognized the importance of invention in the development of young America.²⁵ He gave speeches to motivate creators and advocated the importance of a patent system to protect the interests of inventors.²⁶ After the industrial revolution, emerging hierarchy employment relationships under an organized working environment started to

inventions that have not been reduced to practice. David Prange & Josh Strom, *Securing IP Rights; Five Ways to Improve Transfer from Employees to Employers; Intellectual Property*, THE RECORDER (Sep. 14, 2015), § In Practice, at 9.

23. Abraham Lincoln, *Second Lecture on Discoveries and inventions* (Feb. 11, 1895), www.abrahamlincolnonline.org/lincoln/speeches/discoveries.htm.

24. See Fisk, *supra* note 18, at 1128-29 (citing to Abraham Lincoln's free labor spirit to explain the goal of patent law is to honor the rights of the inventor).

25. Lincoln, *supra* note 23; Gene Quinn, *Celebrating Presidents Who Advocated for the U.S. Patent System*, IP WATCHDOG (Feb. 18, 2013), www.ipwatchdog.com/2013/02/18/celebrating-presidents-who-advocated-for-the-u-s-patent-system/id=34896/.

26. *Id.* The patent system gave the inventor, for a limited time, the exclusive use of his invention, “and thereby added the fuel of *interest* to the *fire* of genius, in the discovery and production of new and useful things.” Lincoln, *supra* note 23.

confront the idea that the inventor owned his or her inventions.²⁷

This confrontation starts when an inventor is an employee who creates for another person or entity as work, or uses such person's or entity's resources to bring about his or her own idea.²⁸ In these situations, the employer would have substantial interest in such employee inventions regarding their business.²⁹ For example, Cetus is a research company known for its Noble Prize winning technique PCR as a method to quantify blood-borne levels of HIV.³⁰ While collaborating with Stanford University's Department of Infectious Diseases, Cetus allowed Dr. Holodniy from the university to have access to Cetus and its PCR information.³¹ After getting familiar with PCR and working with Cetus's employee, Holodniy invented a PCR-based procedure for HIV measurement in the blood system.³² In this case, the issue was who held the patent.³³

The employers, like Cetus, would want to own the inventions exclusively, not only because the inventions are beneficial to the business development, but also because employers have supported the invention process with their own resources.³⁴ The hierarchical character of employment relations tend to give employers broad

27. Fisk, *supra* note 18, at 1128-29. "The law of employee inventions is an unstable mixture of the two bodies of law, [patent law and the law of master and servant], the former honoring the rights of the inventor as employee, the latter being skeptical of the rights of the employee as inventor." *Id.* at 1128.

28. *Id.*

29. *See id.* at 1129 ("[t]oday it would be more correct to say that the patent system adds another instrument of control to the well-stocked arsenal of monopoly interest . . . because it is the corporations, not their scientists, that are the beneficiaries of patent privilege," citing to DAVID F. NOBLE, AMERICA BY DESIGN: SCIENCE, TECHNOLOGY, AND THE RISE OF CORPORATE CAPITALISM 84 (Knopf 1977)).

30. *Bd. of Trs. v. Roche Molecular Sys.*, 563 U.S. 776, 776 (2011).

31. *Id.*

32. *Id.*

33. There are other examples of employee invention and how it creates conflicts. In *Mattel, Inc. v. MGA Entm't, Inc.*, Bryant worked for Mattel, which produced Barbie doll, as a designer on fashion and hair style for high-end Barbie dolls. 616 F.3d 904, 907 (9th Cir. 2010). Bryant conceived a new idea on a line of Bratz dolls while still employed at Mattel, and Bryant pitched this idea and brought sketches and dummies of Bratz dolls to MGA, Mattel's competitor. *Id.* at 907. Mattel found out Bryant was working with MGA under a consulting agreement to develop Bratz dolls. *Id.* at 907-08. The issue was who owned Bratz? Bryant, Mattel, or MGA? In *Hapgood v. Hewitt*, Hapgood, the president of Hapgood & Company, hired Hewitt to be the superintendent of the manufacturing department to improve and devise ploughs manufactured to adapt to the market. 119 U.S. 226, 229 (1886). Under the direction of Hapgood, Hewitt devised an iron sulky plough that improved upon a previous wooden sulky version. *Id.* at 230. The issue was who owned the iron sulky plough. Hewitt, or the corporation?

34. *See Parker A. Howell, Whose Invention is It Anyway? Employee Invention-Assignment Agreements and Their Limits*, 8 WASH. J.L. TECH. & ARTS 79, 85-87 (2012) (demonstrating the default rule that an employee inventor owns rights in inventions contradicts with employers' expectations).

rights over work products of their employees.³⁵ By giving such broad rights, exclusive ownerships of any employee invention to employers discourages individual invention.³⁶ On the other end of the spectrum, inventors are still fighting for the traditional idea of inventor ownership and seeking protection on ownership rights over their inventions.³⁷

The fight over rights for employee inventions has only become more complicated with the passage of time.³⁸ On the one hand, the advancement in technology and the acceleration of interstate and international business cooperation have fostered a corporation-centered economic market, inviting team efforts to keep up with.³⁹ On the other hand, the law concerning pre-invention assignment provisions has not kept pace with the evolution of economic structure to protect employee-inventors. Thus, corporations have vital interests in innovations their employees made and legal power to maximize their own interests.⁴⁰

B. The U.S. History on the Development of Employee Invention Law

The Industrial Revolution drove people to work under an employer because the use of machines increased the efficiency and scale of manufacturing.⁴¹ It gave rise to a factory system in need of a large work force.⁴² Since then, more and more disputes on employee inventions came before the courts.⁴³ During 1840 to the mid-1880s, courts followed the traditional notion that employee-inventors own their inventions.⁴⁴ With the rise of factory system, courts started to protect employers' right to use such inventions

35. Fisk, *supra* note 18, at 1129.

36. *See id.* ("The patent law nourished this habit of free thought by allowing the ingenious to profit.")

37. *Id.* at 1170. In *Solomons v. United States*, the Court only acknowledged a right to use for employers who made a contribution to the invention; but the employee inventors still owned their invention. 137 U.S. 342, 346 (1890).

38. Fisk, *supra* note 18, at 1141-42. "The notion of the inventor as a genius working alone in his shop became increasingly anachronistic as the complexity of technology required numerous machinists, chemists, or other skilled workers to contribute to the development of ever more sophisticated and complicated machines, compounds, and processes." *Id.* at 1141.

39. *Id.* at 1134. "The rise of corporate form enabled courts to see the creation and ownership of ideas as a collective enterprise, rather than in terms of individual inventors." *Id.*

40. *See generally* Dan L. Burk, *Intellectual Property and the Firm*, 71 U. CHI. L. REV. 3, 4-10 (2004) (analyzing intellectual property as the most important intangible assets in a corporation).

41. *Industrial Revolution*, HISTORY, www.history.com/topics/industrial-revolution.

42. *Id.*

43. Fisk, *supra* note 18, at 1139-41.

44. *Id.* at 1142-43.

when an employee consented to employer's usage of the employee's unpatented invention.⁴⁵ Based on the equity doctrine of estoppel, courts reasoned that an employee inventor who allowed the employer to use his inventions could not later, upon obtaining a patent, sue the employer for infringement.⁴⁶

The first published case on employee invention ownership was *McClurg v. Kingsland* decided by the Supreme Court in 1843.⁴⁷ In that case, plaintiffs were William McClurg and his partners, doing business under the firm of McClurg (collectively McClurg). The defendants were Lawrence Kingsland and his partners, doing business under the firm of Kingsland (collectively Kingsland).⁴⁸ The inventor, James Harley (Harley), was Kingsland's employee who allowed Kingsland to use his invention prior to its patenting in exchange for a higher wage.⁴⁹ Harley assigned his patent right to McClurg after he patented the device, and McClurg sued Kingsland for patent infringement.⁵⁰ Relying on three precedents,⁵¹ the Court held that Kingsland was not liable for infringement because by allowing public use of the invention before patent application, Harley was deemed to have abandoned his right for exclusive use of the invention.⁵² Even though none of the three infringement cases involved employment, the Court decided to extend the consent of public use of the invention to the employment setting as an invalidation to a subsequent patent application.⁵³

At that time, an employer could freely use employee inventions only when the employee inventor consented unless the employee inventor requested the employer to use to test the invention.⁵⁴ Therefore, without altering the traditional view that inventors own their own inventions, the equity doctrine of estoppel prevented an employee from suing for infringement when he knowingly allowed or encouraged his employer to use his inventions.⁵⁵

In the mid-1880s, courts started to recognize employers' role and contribution in the inventing process.⁵⁶ For example, employers' resources supplied the opportunity to invent, to have

45. *Id.*

46. *Id.* at 1144.

47. *McClurg v. Kingsland*, 42 U.S. 202 (1843).

48. *Id.* at 202.

49. *Id.* at 205.

50. *Id.* at 206.

51. *Pennock v. Dialogue*, 27 U.S. 1 (1829), *Grant v. Richmond*, 31 U.S. 218 (1832), and *Shaw v. Cooper*, 32 U.S. 292 (1833). "All three concerned the question whether an inventor who sells or allows use of his invention prior to seeking a patent can thereafter obtain a patent." Fisk, *supra* note 18, at 1145. The public use rule did not allow such inventor to obtain a patent after public usage. *Id.* at 1145-46.

52. *McClurg*, 42 U.S. at 210.

53. Fisk, *supra* note 18, at 1145.

54. *Id.* at 1146.

55. *Id.* at 1144.

56. *Id.* at 1151.

wages paid to employee-inventors, and to implement marketing strategies promoting the inventions.⁵⁷ Courts began awarding employers a “shop right” to their employees’ inventions, regardless of the employees’ consent.⁵⁸ A shop right is “a nonexclusive license to use, manufacture, and sell an invention without financial obligation to the inventor.”⁵⁹ The shop right doctrine is a recognition of an employer’s contribution towards the making of an employee invention.⁶⁰ In 1886, the federal circuit courts of Massachusetts and New Hampshire firstly decided two cases based on the shop right doctrine.⁶¹

In the same year, the Supreme Court decided *Hapgood v. Hewitt*,⁶² the first case decided on ownership of employee invention after *McClurg*.⁶³ In this case, the employer corporation, Hapgood Plough Company, hired Hewitt to improving and perfecting ploughs and other agricultural implements adapted to the general trade of the corporation.⁶⁴ During the whole time of the construction of the plough, it was understood by all parties engaged that the plough was being devised and constructed for the use and benefit of the corporation.⁶⁵ After the completion of plough, Hewitt left the

57. “The courts began to focus less on the employee’s conduct in allowing use of the invention and more on the employer’s conduct in supporting the development of the invention.” *Id.*

58. *Id.* See *Solomons*, 137 U.S. at 346 (By using employers’ property and other employees’ service for an improved devise, the employee inventor has given to the employer an irrevocable license to use the improved devise); *Lane & Bodley Co. v. Locke*, 150 U.S. 193 (1893) (the employee inventor gave the employer a license to use based on the facts that he received a decent amount of salary, used the employer’s tools and patterns, and most importantly the inventor waited a long time before seeking a remedy); *Gill v. U.S.*, 160 U.S. 426, 434-35 (1896) (reasoning that the employee inventor had received an increase in wages after the use of the invention, and that the employer government bore the risk of unsuccessful inventions, thus the employee inventor was estopped from later claiming exclusive right); *Blauvelt v. Interior Conduit & Insulation Co.*, 80 F. 906, 908 (2d Cir. 1897) (holding that an inventor cannot, upon obtaining a patent, seek to restrain his employer from the use of such machine not only because the employee did not object to the prior use, but also because the employer paid the inventor weekly wages, helped to manufacture and brought the invention to practice, and supported the manufacturing with the employer’s material and tools).

59. Evelyn D. Pisegna-Cook, *Ownership Rights of Employee Inventions: The Role of Preinvention Assignment Agreements and State Statutes*, 2 U. BALT. INTELL. PROP. L.J. 163, 169 (1994) (explaining that “the shop right comes into existence on the basis of implied contract from the fact that the employer’s property is used by the employee in making or perfecting the invention or discovery.”).

60. *Fisk*, *supra* note 18, at 1151.

61. *Am. Tube-Works v. Bridgewater Iron Co.*, 26 F. 334 (Cir. Ct. D. Mass. 1886), and *Jencks v. Langdon Mills*, 27 F. 622 (Cir. Ct. D. NH. 1886). *Fisk*, *supra* note 18, at 1151.

62. 119 U.S. 226 (1886).

63. *Fisk*, *supra* note 18, at 1152.

64. *Hapgood*, 119 U.S. at 229.

65. *Id.* at 231.

company and then patented on the improvements in the plough.⁶⁶ For the first time, Hewitt claimed that he had the exclusive right to manufacture the improved parts of the plough as were covered by the patent.⁶⁷

The Court in *Hapgood* held that the employer corporation had a right to make and sell the patented improvement as a part of its business based on the employment contract.⁶⁸ But, this right was not transferable, and was extinguished with the dissolution of the corporation.⁶⁹ The Court awarded a shop right to the employer corporation because Hewitt did not challenge the employer's use and manufacture of the plough at all before he obtained the patent.⁷⁰ Furthermore, Hewitt was directed to comply with the corporation's requirement on the invention, was paid a salary by the corporation for his expertise, and was supported by the corporation's labor and resources when developing the new plough.⁷¹

After *Hapgood*, courts began giving more protection to employers' interests in their employees' inventions, but still held the idea that employees owned the patent to their inventions.⁷² Through the shop right, employers had nothing more than a license to use their employees' inventions without paying their employees royalties or other compensations.⁷³

Courts' tendency to protect employers can be explained by the favoring of corporate-centered economy. Horizontally, business interactions between corporations are more efficient than interactions between individuals in adaptation to complex technology and economic market.⁷⁴ Vertically, the hierarchy structure of corporation is more capable to manage a massive and diverse work force to keep up with the fast growth of economy.⁷⁵ To

66. *Id.*

67. *Id.*

68. *Id.* at 233.

69. *Id.*

70. *Id.* at 231. The court reasoned that “[d]uring the whole time of the construction of the plough, it was understood by all the parties engaged therein, and by those at whose instance its construction was commenced, that it was being devised and constructed for the use and benefit of the corporation.” *Id.*

71. *Id.* at 228-31.

72. Fisk, *supra* note 18, at 1158.

73. The Supreme Court rejected employees' claims seeking additional compensation or royalties from employers' exercise of their “shop right” on the ground of laches because employees received salaries and did not demand such royalties after a long time. *See Solomons*, 137 U.S. at 346; *Locke*, 150 U.S. at 200-01; *Gill*, 160 U.S. at 430 (“a patentee has no right, either in law or morals, to persuade or encourage officers of the government to adopt his invention, . . . [and to] make use of year after year without objection or claim for compensation, and then to set up a large demand, upon the ground that the government had impliedly promised to pay for their use.”).

74. Fisk, *supra* note 18, at 1161-62.

75. *Id.*

promote efficient trade dealings in the corporate-centered economy, courts recognized that it was important for corporations to own their products that developed and devised by their employees.⁷⁶ Thus, courts' perspectives on employee inventions changed from limiting employers to a shop right for an idea that was not theirs, to valuing employer organizations' contribution to the inventive idea and innovation process.⁷⁷

Based on such preference to employers, in *Agawam Co. v. Jordan*, the Court determined that the employer had ownership rights of an invention.⁷⁸ The Court ruled in favor of the employer because the initial concept of the invention came from the employer, not the employee.⁷⁹ Since then, courts have begun to look to the employment contracts by assessing the abilities of the employee and the character of the job when determining ownership.⁸⁰

C. Current Practice with Pre-Invention Assignment Contract: From Hostility to Enforcement

Generally, under the common law, the employee owns his or her inventions, and a shop right is imputed to the employer to use without paying royalties or additional compensation other than agreed salaries.⁸¹ The common law has developed default rules to adjudicate the ownership of an employee invention, which considers the degrees of employee inventors' creative idea and employers' material support to an invention.⁸² Courts consider the nature of the employment, the subject matter of the invention, and the

76. *Id.* at 1162. In *Dempsey v. Dobson*, The Pennsylvania Supreme Court recognized the importance of a color mixer's work to the employer's business as a manufacturer of carpets, and thus a color mixer could not assert an exclusive title of the color books based on the shop right analysis. 174 Pa. 122, 130 (1896). In its second opinion on *Dempsey v. Dobson*, the court explained that "if a color mixer could at his pleasure carry off the recipes and color books from his employers' factory and refuse to permit their further use except upon his own terms, it would be in his power to inflict enormous loss on the manufacturer at any moment, and not merely to disturb, but to destroy his business." 184 Pa. 588, 593 (1898).

77. Fisk, *supra* note 18 at 1163.

78. 74 U.S. 583 (1869).

79. *Id.* at 602-03. The court explained that "where a person has discovered an improved principle . . . and employs other persons to assist him in carrying out that principle, . . . [in the course of employment] they make valuable discoveries ancillary to the plan. . . , such suggested improvements are in general to be regarded as the property of the party who discovered the original improved principle . . ." *Id.*

80. Fisk, *supra* note 18, at 1166-67. See also *U.S. v. Dubilier Condenser Corp.*, 289 U.S. 178, 187 (1933); *E.J. McKerman Co. v. Gregory*, 252 Ill. App. 3d 514, 545 (2d Dist. 1993) ("absent a specific agreement, an employer's rights arise from the inventor's employment status.").

81. See *Pisegna-Cook*, *supra* note 59, at 165.

82. *Id.*

resource contributions of the employer when disputes arise.⁸³ These factors put employee inventions into three categories: employer-specified inventions, general inventions, and private inventions.⁸⁴

In theory, employer-specified inventions are those assigned by the employers for work.⁸⁵ Employee inventors are hired to invent employer-specified inventions as directed by the terms of the employment contract.⁸⁶ It is well settled that the ownership of such inventions belongs to the employer because the employee inventor has only performed his duty under the employment contract in exchange for the stated salary.⁸⁷ General inventions are “those made partly or wholly at the employer’s expense but not at the employer’s specification,” and are owned by the employee-inventor with a shop right to the employer.⁸⁸ Private inventions are those made “on the employee’s own time, and not at the employer’s expense,” and are owned by the employee-inventor without an implied shop right “even if the invention relates to the business of the employer.”⁸⁹

In *Dubilier*, the Supreme Court affirmed the distinction made by the lower courts between “research” and “invention.”⁹⁰ In that case, Dunmore and Lowell were employed by the United States in the radio section of the Bureau of Standard for researching and testing in the laboratory.⁹¹ The pair invented and obtained three patents for radio communication devices while being assigned a duty to research and test the “radio receiving sets” for airplanes.⁹² The U.S. argued that the pair was merely doing their job engaging in research work that expressly involved an improvement requirement.⁹³ The Court reasoned that an inventive act was the birth of an idea and then reduced it into practice, not merely finding out the laws of nature or researching the operation of natural laws.⁹⁴ The Court concluded that the radio communication devices

83. *Id.*

84. According to Pisezna-Cook, these three categories also correspond with three types of employment: specific inventive employment which is “for the express purpose of creating employer-specified inventions,” general inventive employment which is to “design or construct methods of manufacture,” and general employment which is all other employment including management. *Id.* at 166.

85. *Dubilier*, 289 U.S. at 187.

86. *Id.*; *Standard Parts Co. v. Peck*, 264 U.S. 52, 59-60 (1924).

87. Pisezna-Cook, *supra* note 59, at 166; *Dubilier*, 289 U.S. at 187; *Peck*, 264 U.S. 59-60.

88. Pisezna-Cook, *supra* note 59, at 167. *Hapgood*, 119 U.S. at 233; *Dubilier*, 289 U.S. at 188-89; *Solomons*, 137 U.S. at 346.

89. Pisezna-Cook, *supra* note 59, at 168 (citing to *Gill*, 160 U.S. at 433).

90. *Dubilier*, 289 U.S. at 183.

91. *Id.*

92. *Id.* at 183-85.

93. *Id.* at 182.

94. *Id.* at 188. The court explained the difference was due to a recognition of the peculiar nature of the act of invention, which consists neither in finding out

were considered general inventions because Dunmore and Lowell acquired the idea and invented on their own without any specific instruction by the United States. Therefore, the U.S. was only entitled to a shop right rather than ownership of the inventions.⁹⁵

The three categories of inventions and the shop right rule are both dependent on the facts of a particular case, and courts need to consider multiple factors to determine ownership and the extent of the shop right to the employer.⁹⁶ Therefore, heavy fact-based analysis made it hard to predict how a court will rule.⁹⁷ “The potential unpredictability of the courts, coupled with the employer’s desire to obtain greater ownership rights than the common law provides, have led employers to require employees to sign pre-invention assignment agreements.”⁹⁸

Pre-invention assignment agreements are employment conditions assigning ownership of any future inventions made by the employee during the course of employment to the employer.⁹⁹ Earlier courts were hostile towards enforcing such contracts.¹⁰⁰ In 1887, a court acknowledged an assignment of a part interest in

the laws of nature, nor in fruitful research as to the operation of natural laws, but in discovering how those laws may be utilized or applied for some beneficial purpose, by a process, a device, or a machine. It is the result of an inventive act, the birth of an idea and its reduction to practice; the product of original thought; a concept demonstrated to be true by practical application or embodiment in tangible form. *Id.* at 188.

95. *Dubilier*, 289 U.S. at 193-96. The radio communication devices was not employer-specified invention because Dunmore and Lowell were only instructed to test and modify the design of radio devices that their employer already had. *Id.* at 183. They were instructed to modify an “Eckhart recorder” to an existing project of “visual indicator for radio signals.” *Id.* at 184. They were also assigned to research for “airship bomb control and marine torpedo control.” *Id.* On the other hand, Dunmore applied alternative current to obtain a relay for operating a telegraph instrument that had no relation to the assigned control system for aircrafts. *Id.* Then, the pair applied such idea to broadcast receiving sets, which was not involved in or instructed by any projects assigned by their employer. *Id.* Therefore, the invention considered as general invention because the idea was conceived by Dunmore and Lowell independently rather than assigned by the employers. *Id.* at 199.

96. Piseigna-Cook, *supra* note 59, at 169-70.

97. *Id.* at 171.

98. *Id.* The employers prefer agreements because contract provisions leave the default common law rule behind. Fisk, *supra* note 18, at 1182. The agreements allow employers to have more rights over employee inventions and makes the transfer of ideas appear to be “the product of free choice and arms-length negotiation.” *Id.*

99. Generally, the language of a pre-invention assignment is that the employee “agrees to assign” or “will assign and do[es] hereby assign” to the employer his or her “right, title, and interest in inventions resulting from his or her employment there.” *Roche*, 563 U.S. at 776.

100. Fisk, *supra* note 18, at 1185. “Although by 1855 the law was settled that contracts to assign patents were enforceable, at least outside the employment context, courts used a variety of rules of interpretation to make employee’s pre-invention assignment agreements difficult for employers to enforce.” *Id.*

patents at issue.¹⁰¹ However, the court expressed disfavor to such assignment because it acted as “a mortgage on a man’s brain to bind all its future products.”¹⁰² The court worried that assigning future interests would be too ambiguous and uncertain.¹⁰³ Therefore, the future assignment of ownership on an invention not yet made should be limited.¹⁰⁴ With this hostility, courts would decline to enforce the assignment in absence of a clear written contract.¹⁰⁵ Even when there was a written contract, courts would closely scrutinize the coverage of the assignment and construe narrowly against the employer.¹⁰⁶

At the turn of the twentieth century, courts started to enforce pre-invention assignment contracts less restrictively because courts accepted that a paid job opportunity served as sufficient consideration.¹⁰⁷ Also, “courts regarded contracts to assign future improvements related to the employer’s business as reasonably necessary to protect the employer’s investment in the business,” and to promote innovations.¹⁰⁸

The Supreme Court disagreed with a strict requirement of clear and plain language on the transfer of a general invention concerning the enforcement of a pre-invention assignment contract.¹⁰⁹ In *Standard Parts Co. v. Peck*, the Court reasoned that Peck was contracted to “devote his time to the development of a process and machinery” for a stated compensation.¹¹⁰ Therefore, the property of such “process and machinery” belonged to “him who

101. *Aspinwall Manuf’g Co. v. Gill*, 32 F. 697, 700-02 (Cir. Ct. D. N.J. 1887).

102. *Id.*

103. *Id.* at 700. The court further argued that the assignment of all future improvements was not necessary unless it was based on a valuable consideration. *Id.* at 701.

104. The pre-invention assignment agreements must be reasonable and must not be found unconscionable or against public policy. Howell, *supra* note 34, at 87.

105. Fisk, *supra* note 18, at 1186-87. *See also* *Pressed Steel Car Co. v. Hansen*, 137 F. 403, 406 (3d Cir. 1905) (such contract must be clearly and unequivocally proved by explicit and unambiguous terms).

106. *See* Fisk, *supra* note 18, at 1187 (“courts would exclude all inventions that were either not directly related to the employee’s work or not clearly made during the term of the contract.”); *see also* *Joliet Mfg. Co. v. Dice*, 105 Ill. 649, 651-52 (1883) (“nothing short of a clear and specific contract to that effect will vest the property of the invention in the employer, to the exclusion of the inventor.”).

107. Fisk, *supra* note 18, at 1191-92 citing to *Hulse v. Bonsack Mach. Co.*, 65 F. 864, 868 (4th Cir. 1895) (“[h]ere we have the case of an ingenious man, without opportunity of developing his talent, and struggling under difficulties, enabled by this contract to secure employment in a large and prosperous corporation, where he could give his inventive faculties full play.”).

108. *Id.* at 1192. “The spread of the corporate form of business ownership emphasized for courts the corporate, or collective, nature of work and idea ownership.” *Id.* at 1198.

109. *Standard Parts Co. v. Peck*, 264 U.S. at 59.

110. *Id.*

engaged the services and paid for them.”¹¹¹ This tendency to uphold pre-invention assignment contracts revealed not only a transfer of ownership of inventions but also a transfer of power to the employer who already held great bargaining power to begin with.¹¹²

Seven states passed statutes limiting employers’ broad discretionary power to pre-assign all future inventions in pre-invention assignment agreements in order to protect employees.¹¹³ These statutes, varying slightly, make agreements unenforceable only when the assignments involve private inventions made on employees’ own time, without using employers’ resources, unrelated to the business or employees’ job obligations.¹¹⁴ These statutes also require employers to notify employees of their rights, but the burden is on employees to prove that the disputed inventions are not assignable.¹¹⁵

Utah and Nevada adopted statutes in favor of the employer that supplant the common law of invention ownership by changing the default allocation of ownership to employers.¹¹⁶ The Utah statute justifies the assignment to the employer with a consideration of employment or continuing employment.¹¹⁷ In addition, the employer only need to provide other consideration than employment for an assignment of private invention to be enforceable.¹¹⁸ More aggressively, the Nevada statute provides that “except as otherwise provided by express written agreement, an employer is the sole owner of any patentable invention or trade secret developed by his employee during the course of the employment that relates directly to work performed during the course of the employment.”¹¹⁹

111. *Id.* at 59-60.

112. Pisegna-Cook, *supra* note 59, at 173.

113. CAL. LAB. CODE § 2870 (West 2016) (enacted 1979); 19 DEL. CODE ANN. § 805 (West 2016) (enacted 1984); 765 ILL. COMP. STAT. ANN. 1060/2 (West 2016) (enacted 1983); KAN. STAT. ANN. §§ 44-130 (West 2016) (enacted 1986); MINN. STAT. ANN. § 181.78 (West 2016) (enacted 1977); N.C. GEN. STAT. ANN. §§ 66-57.1, 66-57.2 (West 2016) (enacted 1981); WASH. REV. CODE ANN. § 49.44.140 (West 2016) (enacted 1979); Howell, *supra* note 34, at 81; Robert P. Merges, *The Law and Economics of Employee Inventions*, 13 HARV. J. L. & TECH. 1, 7 (1999).

114. Merges, *supra* note 113, at 9.

115. Howell, *supra* note 34, at 90, 92.

116. UTAH CODE ANN. § 34-39-3 (West 2016) (enacted 1989); NEV. REV. STAT. ANN. § 600.500 (West 2015) (enacted 2001); Howell, *supra* note 34, at 91-92.

117. UTAH CODE ANN. § 34-39-3(5), (6) (West 2016).

118. UTAH CODE ANN. § 34-39-3(1), (4) (West 2016); Howell, *supra* note 34, at 91-91.

119. NEV. REV. STAT. ANN. § 600.500 (West 2015). “Nevada has become the only state that allows ownership of patentable inventions to be transferred from one party to another in the complete absence of an assignment agreement, and without any form of actual notice to the transferor.” Mary LaFrance, *Nevada’s Employee Inventions Statute: Novel, Nonobvious, and Patently Wrong*, 3 NEV. L.J. 88 (2002).

Except Utah and Nevada, state legislation only protects employers' overreaching on private inventions made by employees, but even a small use of an employer's resources might render the invention outside of the statute's protection.¹²⁰ Without distinguishing between specific inventions and general inventions, state legislation still leaves great discretion to the employers on the pre-assignment of general inventions, which are mixed with specific inventions through broad and standardized languages. For example, the employment contract between Dr. Shukh, the leading scientist in the hardware industry, and Seagate contained an assignment provision which Dr. Shukh "hereby assign[ed] to [Seagate] all right, title, and interest in and to any inventions" made during his term of employment.¹²¹ The standardized language to assign "all right, title and interest in and to any inventions" does not distinguish specific inventions and general inventions. The terms assign all inventions created by Dr. Shukh to his employer Seagate. Under the common law, the employee inventor should entitle ownership to general inventions while the employer only has a shop right.¹²² Now, due to pre-invention assignment agreements, Seagate could exploit Dr. Shukh's rights and entitlement to his general inventions.¹²³

On a federal level, the Bayh-Dole Act sets a uniform policy on the ownership of federal funded inventions.¹²⁴ However, the Act

120. Pisegna-Cook, *supra* note 59, at 178; *See also* Cubic Corp. v. Marty, 185 Cal. App. 3d 438, 453 (4th Dist. 1986) (Even though Marty developed the manuscript of the training device on his own time, his former employer Cubic owned the patent because Marty used Cubic personnel and funding to add circuitry which was necessary to make his invention work).

121. *Shukh*, 803 F.3d at 621. A broader assignment provision can be found in the contract between Cubic and Marty:

To promptly disclose to Company [Cubic] all ideas, processes, inventions, improvements, developments and discoveries coming within the scope of Company's business or related to Company's products or to any research, design experimental or production work carried on by Company, or to any problems specifically assigned to Employee, conceived alone or with others during this employment, and whether or not conceived during regular working hours. All such ideas, processes, trademarks, inventions, improvements, developments and discoveries shall be the sole and exclusive property of Company, and Employee assigns and hereby agrees to assign his entire right, title and interest in and to the same to Company.

Cubic Corp., 185 Cal. App. 3d at 444.

122. *See supra* note 95-96.

123. *See* Pisegna-Cook, *supra* note 59, at 172 ("although the courts have developed a comprehensive set of common law rules to allocate pre-invention rights, the pervasiveness of pre-invention agreements has made these rules irrelevant in most cases.").

124. Toshiko Takenaka, *Serious Flaw of Employee Invention Ownership Under the Bayh-Dole Act in Stanford v. Roche: Finding the Missing Piece of the Puzzle in the German Employee Invention Act*, 20 TEX. INTELL. PROP. L.J. 281, 282 (2012).

does not help to solve the conflict on the allocation of ownership between employer and employee inventors; it only emphasizes that the federal government has a priority over employers of federal funded inventions that already belonged to employers.¹²⁵ The Bayh-Dole Act leaves the allocation of ownership between the employer and employee inventor untouched.¹²⁶

Unlike the U.S. approach, Germany takes another route regarding employee inventors. Germany focuses on a presumption that employee inventors own their inventions, and employers need to pay reasonable compensation for taking such ownership.¹²⁷ For example, the German Employees' Invention Act (EIA) provides detailed procedures for transferring ownership from employee inventors to employers.¹²⁸ EIA also has specific requirements to protect employee interest, such as a guideline for calculating a remuneration (the Guideline).¹²⁹

Another way to approach the allocation of intellectual property ownership is reflected in copyright law.¹³⁰ Copyright law is similar to patent law in nature but offers protection to other kinds of intellectual property such as books, music, architectural drawings.¹³¹ Recognizing authors' relatively weak bargaining position with their publishers, the U.S. copyright law allows authors to regain rights in their copyrightable works near the end of the copyright protection period.¹³² The purpose of this reversionary interest is to allow authors to exploit their work for a price that better reflects the works' market value.¹³³

Inspired by the reversionary interest in copyright, Richard Kamprath, in *Patent Reversion: An Employee-Inventor's Second Bite at the Apple*, proposed a statutory right of patent reversion to redress employee inventors who are also in a weak bargaining position, like the authors.¹³⁴ According to his theory, even though pre-invention assignment agreements assign patent rights to an employer, the patent rights would revert back to the employee

125. *Roche*, 563 U.S. at 790. There, the employer contracted with the U.S. and received federal funds. *Id.*

126. *See id.* ("Only when an invention belongs to the contractor [employer] does the Bayh-Dole Act come into play"); Takenaka, *supra* note 124, at 302.

127. Heinz Goddar, *Employees' Inventions and Model Agreements for Industry-Research Collaboration*, www.iaea.org/INPRO/9th_Dialogue_Forum/05_BreakoutSession/BOS_Topic2/Goddar-Germany-Employees_Inventions.pdf.

128. Takenaka, *supra* note 124, at 311.

129. Goddar, *supra* note 127, at 1.

130. Kamprath, *supra* note 21, at 199.

131. Brinks Gilson & Lione, *supra* note 21.

132. Adam R. Blankenheimer, *Of Rights and Men: The Re-alienability of Termination of Transfer Rights in Penguin Group v. Steinbeck*, 24 BERKELEY TECH. L.J. 321, 321 (2009).

133. *Id.* at 321.

134. Kamprath, *supra* note 21, at 188, 203.

inventor the last two years of the patent period.¹³⁵ The scope of patent reversion includes all inventions created by employee inventors within the scope of their employment.¹³⁶ The employee inventor is required to notify the employer and the United States Patent and Trademark Office (USPTO) in advance to trigger this statutory right.¹³⁷ After reversion, the employer and the employee inventor hold joint ownership in the invention for the last two years.¹³⁸ Based on Kamprath, a statutory enforcement of patent reversion would properly compensate employee inventors and thus stimulate their incentive to create.¹³⁹ Next, this comment evaluates these different legal principles to arrive at a better solution to the longstanding conflict.

III. ANALYSIS

This section analyzes the limits on the pre-invention assignment agreements adopted in the U.S. to solve the allocation of employee invention ownership, especially the allocation of general inventions. Part A examines the contract principles behind the adjudication of pre-invention assignment agreements, and the problem and ambiguity they created. Part B reveals that the United State Supreme Court's interpretation of the Bayh-Dole Act did not affirmatively give employers ownership of employee inventions. Part C explores the German rule-based approach on the ownership of employee invention that is entirely different than the U.S. common law approach. Part D studies how copyright law adopts a reversionary interest to solve its ownership allocation problem.

A. Common Law of Contracts and States' Legislation: Pre-Invention Assignment Agreements and Their Limits

A standard pre-invention assignment agreement assigns to employer all ownership interests, at the beginning of the contractual relationship, on any invention made by employees during their employment.¹⁴⁰ Aside from the ownership assignment, these agreements also "impose other duties on employees, including (1) a duty to assign patent applications and patents to the employer, (2) a duty to assist in the patent prosecution, and (3) a general duty to cooperate in the perfection of the employer's rights in the

135. *Id.* at 202.

136. *Id.* at 204, n.128.

137. *Id.* at 206.

138. *Id.* at 204.

139. *Id.* at 213 (employee inventors would have incentive to innovate if they know the inventions would financially benefit them).

140. *Merges, supra* note 113, at 7.

invention.”¹⁴¹

When there is no clear contract, the common law default rules fill the gap.¹⁴² The common law divides employee inventions into categories based on how the invention is conceived and produced. The categorizations and development of the relative default rules are important to adequately allocate rights for employee inventions based on employers’ and employees’ contributions to bring the invention into existence.¹⁴³ The employers own specific inventions because employees who are hired to develop those inventions comply with the ideas and instructions from employers.¹⁴⁴ On the other hand, employee inventors own their private inventions conceived independently and developed on the employees’ own time without using the employers’ resources.¹⁴⁵ The allocation of ownership on these two types of invention is not disputed.¹⁴⁶

The most complicated area is the ownership for general inventions.¹⁴⁷ When employees conceive ideas and employers provide material supports, both parties deserve a fair reward for their contributions.¹⁴⁸ Over time, the common law has developed the shop right doctrine to help allocate rights on general invention equitably to the parties.¹⁴⁹ However, employers’ wide use of pre-

141. *Id.* at 8.

142. *Id.* at 6.

143. The principals behind the common law default rules are important because they were being explored and developed by courts as early as the conflict started. *See generally McClurg*, 42 U.S. 202 (1843); *Jordan*, 74 U.S. 583 (1869); *Hapgood*, 119 U.S. 226 (1886); *Am. Tube-Works*, 26 F. 334 (Cir. Ct. D. Mass. 1886); *Solomons*, 137 U.S. 342 (1890); *Dalzell v. Dueber Watch Case Mfg. Co.*, 149 U.S. 315 (1893); *T.H.Symington Co. v. National Malleable Castings Co.*, 250 U.S. 383 (1919); *Peck*, 264 U.S. 52 (1924); *Dubilier*, 289 U.S. 178 (1933).

144. *See Dubilier*, 289 U.S. at 187 (“One employed to make an invention, who succeeds, during his term of service, in accomplishing that task, is bound to assign to his employer any patent obtained. The reason is that he has only produced that which he was employed to invent. His invention is the precise subject of the contract of employment.”).

145. *See id.* at 189 (“The employer . . . has no equity to demand a conveyance of the invention, which is the original conception of the employee alone, in which the employer had no part”); *In Aero Bolt & Screw Co. v. Iaia*, 180 Cal. App. 2d 728, 737-40 (1960) (the court affirmed the trial court’s finding that “Iaia, on his own time, and at his own expense, designed and developed the fastener; that he paid for all of the development costs out of his own pocket and was not reimbursed for any expense in that regard; that he paid all patent cost”; thus, the court ruled that the employer was not entitled to an assignment of the patent).

146. *Merges*, *supra* note 113, at 6-7; *Howell*, *supra* note 34, at 84; *Pisegna-Cook*, *supra* note 59, at 166, 168.

147. *Howell*, *supra* note 34, at 85; *Pisegna-Cook*, *supra* note 59, at 167.

148. The employers get more benefit than employee inventors through pre-invention assignment agreements. *See generally Pisegna-Cook*, *supra* note 59 (“an employer can obtain the property rights of patentable employee inventions that the employer may not otherwise have a legal right to [under the common law]”).

149. *Id.* at 163; *Merges*, *supra* note 113, at 6; *Solomons*, 137 U.S. at 346. For

invention assignment agreements undermines the long-established principles trying to credit employers with employees' own creative ideas.

Unlike the common law, pre-invention assignment agreements do not allocate ownership interests corresponding to each type of invention. The general language in the agreements allows employers to acquire any inventions made during the employment period.¹⁵⁰ With a great deference to freedom-of-contract principle, these contractual agreements offer less protection to employee inventors' rights especially over general inventions by superseding the common law.¹⁵¹

Pre-invention assignment agreements should be considered as adhesion contracts due to its broad and unspecific terms.¹⁵² A contract of adhesion is unenforceable when it is both procedurally and substantively unconscionable.¹⁵³ Pre-invention assignment agreements are procedurally unconscionable because employees are in an unequal position and can hardly bargain for their rights.¹⁵⁴ The agreements are also substantively unconscionable because the terms are one-sided and leave employees undercompensated for

example, Gill conceived and developed his idea about the machine on his own, but "he did make use of the property and labor of the government in preparing patterns for the iron and steel casting and working drawings and constructing the working machines." *Gill*, 160 U.S. at 433-34. Also, he consented to the use of his machine by the government without a demand for compensation, and thus the government was entitled to a shop right and Gill was estopped from claiming compensation. *Id.* at 435-37. In *Hobbs v. U.S.*, 376 F.2d 488, 495 (5th Cir. 1967) interpreting *Gill's* basis for a royalty-free shop right, the Fifth Circuit concluded that employers' material supports justified not paying a royalty for the use of inventions, and that employees' consent to the use without compensation or royalty estopped employees' later assertion for compensation.

150. *Merges*, *supra* note 113, at 8.

151. The increasing role of contract law in allocation of employee inventions ownership further undermines the principle of patent law. The default contract rules "assigned the vast majority of American employees to the subordinate position in a workplace status hierarchy." John Fabian Witt, *Rethinking the Nineteenth-Century Employment Contract, Again*, 18 LAW & HIST. REV. 627, 630 (2000).

152. *See Pisegna-Cook*, *supra* note 59, at 173. Adhesion contracts are standard form agreements prepared entirely by one party that has greater bargaining power and offered to the other party on a take-it-or-leave-it basis. *Williams v. Ill. Scholarship Comm'n.*, 139 Ill.2d 24, 72-73 (1990); *Shroyer v. New Cingular Wireless Serv.*, 498 F. 3d 976, 983 (9th Cir. 2007); *Larned v. First Chicago Corp.*, 264 Ill. App. 3d 697, 700 (1st Dist. 1994); *Rory v. Cont'l Ins. Co.*, 473 Mich. 457, 490 (2005); *Adler v. Fred Lind Manor*, 153 Wn. 2d 331, 347 (2004) (an adhesion contract exists when (1) the contract is a standard form printed contract, (2) it was prepared by one party and submitted to the other on a take it or leave it basis, and (3) no true equality of bargaining power between the parties exists).

153. *Broemmer v. Abortion Serv.*, 173 Ariz. 148, 153 (1992); *Brown v. Genesis Healthcare Corp.*, 229 W. Va. 382, 393 (2012).

154. *Id.* *See Pisegna-Cook*, *supra* note 59, at 164 (the invention is not yet created at the time of signing the contract, and thus employees enter into the agreement without knowing exactly what they are potentially giving up).

their creative independent ideas.¹⁵⁵

1. *Pre-Invention Assignment Agreements Are Procedurally Unconscionable Because Employers Have Greater Bargaining Powers in the Beginning.*

Pre-invention assignment agreements are often entered into because of the unequal bargaining power that exists between employer and employee. The unequal bargaining power can be explained by an “opportunistic bargaining by parties with asymmetrical information.”¹⁵⁶ The agreements are drafted by employers who know all relevant and worthy bargaining information about business products, working conditions, and related default rules of employment law.¹⁵⁷ Employers are familiar with their business background information, and they tend to have more experiences and knowledge on the legal rules.¹⁵⁸ Big firm employers might have their own legal department and smaller businesses are generally financially capable to hire outside consultation, especially when dealing with legally significant tasks such as drafting an employment contract.¹⁵⁹ Employees, on the other hand, tend to have less personal knowledge about their legal rights and less incentive to seek legal advice under the same circumstances.¹⁶⁰ Legal knowledge gives employers great advantages on drafting terms favorable to them knowing that the financial burden would disincentive employees to sue.¹⁶¹

Furthermore, the discretion over hiring enables employers to leave the employees out of negotiation.¹⁶² Employers offer the agreements to prospective employees on a take-or-leave basis without any opportunity to negotiate the terms.¹⁶³ Moreover, courts have held that employment or a brief period of continued employment are adequate consideration to pre-assign employees’ future inventions.¹⁶⁴ Therefore, employee inventors are at a

155. *Brown*, 229 W. Va. 393.

156. Witt, *supra* note 151, at 650.

157. *See id.* at 654 (Firms are more legally well-represented than individual employees and the big and medium firms are equipped with their own legal departments).

158. *Id.* at 652. “It was the employer who was a repeat player in the employment contract market and who was better able to structure its negotiations around a baseline of finely articulated legal rules”

159. *Id.* “Repeat appearance in the market and the courtroom probably provided many employers strategic, specializing, and institutional advantages in the legal arrangement of the employment relation.”

160. *Id.*

161. *Id.* at 654 (“the complexity of the law of employment appears to have made it prohibitively expensive for the overwhelming majority of wage laborers to litigate disputes with employers.”).

162. Pisegna-Cook, *supra* note 59, at 173.

163. *Id.*; *Williams*, 139 Ill. 2d at 72-73.

164. *Merges*, *supra* note 113, at 8. *Hulse*, 65 F. at 868.

bargaining disadvantage to their prospective employers from the beginning of their relationship.¹⁶⁵

Proponents of pre-invention assignment agreements justify the unequal bargaining power with the essential role played by corporations in innovation and the opportunism created by employee hold-ups if employees keep the ownership.¹⁶⁶ They argue that corporations, as the main players in economic activities, are in a better position than employees to hold the ownership of employee inventions.¹⁶⁷ The idea behind corporate control of research promotes innovation and prompts business activities, such as production and marketing, more effectively.¹⁶⁸ The employers have more resources, such as investment assets, expert personnel, and business connections than individual employees. Those resources help bring innovative ideas into existence, market the complete products, and bear the loss of unsuccessful inventions.¹⁶⁹ Thus, firms and employers are more willing and financially capable to take high risk in investments than individual employees.¹⁷⁰

Additionally, proponents worry that employees keeping ownerships would increase unnecessary transactional costs from hold-up problems.¹⁷¹ For example, nowadays many employee inventions are collective work products containing multiple

165. Kamprath, *supra* note 21, at 191.

166. Merges, *supra* note 113, at 12; Dan L. Burk, *Intellectual Property and the Firm*, 71 U. CHI. L. REV. 3, 4-10 (2004).

167. Citing to historian David Noble, Professor Merges pointed out that “the emergence of strong employer-ownership rules in the United States . . . brought the American patent system more closely into line with the needs of corporate industry.” Merges, *supra* note 113, at 11 citing to DAVID F. NOBLE, *AMERICA BY DESIGN* (1977).

168. The emergence of the firm, as a hierarchical organization, lowers the transactional cost caused by the inefficiency of negotiated bargains in the market. See Burk, *supra* note 166, at 5, 6 (“The development of a firm, which organizes production by command rather than by negotiation, may be explained as an attempt to deter [employee] hold-up problems by eliminating repeated negotiations”).

169. See Merges, *supra* note 113, at 31 (showing the employers bear all the risk on potential inventions, both successful and unsuccessful). “[I]t is unreasonable to eschew the risk yet claim ownership of those inventions made during employment that later turn out to be successful. If this option were available, employees would claim ownership of valuable inventions, leaving the firm with worthless ones.” *Id.*

170. “The assignment of intellectual property places development of valuable innovation in the hands of an entrepreneur who can then coordinate development of that resource.” Burk, *supra* note 166, at 8 (citing to Edmund E. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 276 (1977)).

171. A hold up “occurs whenever one person extorts abnormally large amount of money from another person.” Merges, *supra* note 113, at 12; Burk, *supra* note 166, at 7 (“Allocation of ownership rights to the firm is thus advanced to ameliorate the problem of opportunism within the firm; proprietary control of relationship-specific assets prevents employees from using them to hold up the firm.”).

components so that the “total market value [of a final product] often far exceeds the value of the component standing alone.”¹⁷² If each employee has ownership of the subpart he or she invented, the possibility of the employee holding an essential part of the product for a higher price that does not match the value of the part makes it harder and more expensive for employers or manufacturers to obtain all the patents for a product.¹⁷³ As a result, firms are less likely to invest in research and innovation.¹⁷⁴

Those explanations offered to justify pre-invention assignment agreements address the current market system and possible holdup problems if employees own every type of invention. However, it is not employees holding up every type of invention; it is employers who are trying to take advantage of their position to obtain ownership on all types of inventions. The traditional path has established that employers own specific inventions, in which they have an interest in researching or developing for their business.¹⁷⁵ The real problem created by pre-invention assignment agreements is the arbitrary assignment of general inventions without additional compensation for the idea. Such agreements eliminate the shop right doctrine which is recognized as helpful to prevent the employee holdup problem.¹⁷⁶ Therefore, the explanations offered to justify a broad assignment in agreements do not seem to address the potential procedural unfairness to employees.

2. Pre-Invention Assignment Agreements Are Substantively Unconscionable Because Employee Inventors Are Undercompensated.

As mentioned in the previous section, employers have great bargaining power in drafting terms of employment contracts including the assignment of inventions. Employers also have the power to define compensation to employee inventors in the pre-invention assignment agreements.¹⁷⁷ However, both the employer and the employee, at the signing of the pre-invention assignment

172. See *Merges*, *supra* note 113, at 13 (arguing that holdups are common in the intellectual property context because “discrete intellectual property rights often cover individual components of a complex multicomponent product.”).

173. *Id.* (“Often the potency of a holdup right grows as the target of the strategy – the prospective buyer of the right – invests more money in the project.”).

174. *Id.* at 15, 16 (The firms would incur more risks for each dollar they invested before successfully obtaining the rights to all the components, and thus firms might eliminate research projects.)

175. *Dubilier*, 289 U.S. at 187.

176. See *Merges*, *supra* note 113, at 17 (Giving employers a partial interest in using “firm-related” general inventions “prevents the possibility of a holdup by the employee and consequent underinvestment in [research and development] by the firm.”).

177. *Kamprath*, *supra* note 21, at 191.

agreement, can hardly predict the value of whatever inventions might be created in the future.¹⁷⁸ Thus, the asymmetric bargaining power plus the inability to predict the value of the invention contribute to undercompensating employees for the rights to their general inventions.¹⁷⁹

Courts' deference to contractual terms further compounds the issue of under compensation and exploitation of employees.¹⁸⁰ Even though pre-invention assignment agreements are considered adhesive because they are drafted by the employers without negotiations, courts always enforce them over any objection of unconscionability.¹⁸¹ For example, in *Cubic Corp. v. Marty*, the court found that Marty was adequately compensated by a salary raise and promotion from "Electronics Engineer" to "Senior Engineer."¹⁸² Since the role of Senior Engineer encompassed design work, the agreement was not unconscionable.¹⁸³ In *Mosser Indus. Inc. v. Hagar*, since Hagar had entered into similar agreements with former employers, the court reasoned that he was aware of his rights and obligations.¹⁸⁴ The court held an assignment agreement was enforceable despite a nominal consideration as low as one dollar.¹⁸⁵

Only in the most egregious situations, such as fraud, will courts modify or rescind such agreements.¹⁸⁶ In *Roberts v. Sears, Roebuck & Co.*, Roberts was a low-level Sears employee, and he invented a "quick-release" socket wrench.¹⁸⁷ To induce Roberts to

178. *Id.* at 201; Pisegna-Cook, *supra* note 59, at 181 ("Since the value of an invention or a piece of intellectual property is difficult to determine before it comes into existence, the bargaining power of the employee is greatly diminished by pre-assigning these rights); Merges, *supra* note 113, at 22 ("It is obviously very difficult for the employee to assess what inventions he might be capable of making at [the point when he is hired].").

179. See Kamprath, *supra* note 21, at 188 ("the market continues to leave the employee-inventor undercompensated for his inventive contributions because of the unequal bargaining position held by his employer.").

180. See Merges, *supra* note 113, at 8 ("employers have broad powers—consistently upheld by the courts—to claim employee inventions by contract.").

181. See *id.*; Pisegna-Cook, *supra* note 59, at 174. "Unconscionability includes an absence of meaningful choice on the part of one of the parties together with contract terms which are unreasonably favorable to the other party." *Cubic*, 185 Cal. App. 3d at 449. There are two judicial limitations on adhesion contracts: (1) "a contract or provision which does not fall within the reasonable expectations of the weaker or adhering party will not be enforced against him;" (2) "a contract or provision, even if consistent with the reasonable expectations of the parties, will be denied enforcement if, considered in its context, it is unduly oppressive or unconscionable." *Graham v. Scissor-Tail, Inc.*, 28 Cal. 3d 807, 820 (1981).

182. *Cubic*, 185 Cal. App. 3d at 449, 450.

183. *Id.* at 449.

184. 200 U.S.P.Q. 608 (Pa. Ct. Com. Pl. 1978).

185. *Id.*

186. Merges, *supra* note 113, at 9.

187. 573 F.2d 976, 978-79 (7th Cir. 1978).

assign rights in the wrench, Sears, while fully cognizant of its multi-million dollar appeal, told Roberts that the invention was not completely new and it was worth only \$10,000 at most.¹⁸⁸ The court gave Roberts one million dollars as royalties upon a finding of fraud by Sears, but Sears still held the rights to the patented wrench.¹⁸⁹ Therefore, the unpredictable value of the preassigned inventions and courts deference to the agreements contribute to undercompensating employee-inventors.

Proponents of pre-invention assignment agreements argue that employers award and compensate their employee inventors with four types of reward programs: “(1) implicit career-path progressions that reward significant inventions through a series of implicit promotions, (2) spot bonuses given for significant inventions, (3) output-based bonus schemes, and (4) more elaborate reward systems based on an administrative assessment of invention value.”¹⁹⁰ They argue that these private, non-mandated reward programs award employee inventors significantly.¹⁹¹ Plus, courts require an identifiable invention that has been reduced to practice, not merely a conception, to trigger the operation of pre-invention assignment agreements.¹⁹² Thus, employees can exit with their new ideas because labor mobility and new business development are valuable to the market.¹⁹³ Proponents argue that these two rewarding options balance out the unequal bargaining power.¹⁹⁴

Even though employee inventors get compensation or awards through various reward programs, the programs still undercompensate employees because employers generally define

188. *Id.* at 979.

189. *Id.* at 985. (the “one million dollars was the measure of past profits earned by Sears up to the time of trial. That award, however, is not inconsistent with return of the patent so that [Roberts] can receive the future benefits of the patent that Sears fraudulently acquired.”).

190. *Merges, supra* note 113, at 39-40; *Kamprath, supra* note 21, at 191.

191. *Id.* at 40-41.

192. *Id.* at 48. “The operative legal rule is that conception is the first occurrence of the complete invention in the mind of the inventor, as corroborated by objective evidence.” *Id.* at 47. Then, in the next step, “an inventor must do something affirmative – and hence observable – before an invention can be identified,” and the process is called “reduction to practice.” *Id.* at 48. Therefore, only when an invention was reduced to practice, and thus identifiable it can be assigned and included in the agreements. *Id.* Mere ideas or conceptions are not subjected to the agreement. *Id.*; In *Koehring Co. v. E.D. Etnyre & Co.*, the court held that the agreement did not include ideas from the employee’s common knowledge. 254 F. Supp. 334 (N.D. Ill. 1966). The court ruled that the employee’s rough sketches and designs were never developed during the employment. *Id.* at 356-57. Nor did the employee breach any duty by not continuing his design during his employment. *Id.*

193. *Merges, supra* note 113, at 47-49.

194. *Id.* at 46. “The full picture of the options an employee-inventor enjoys shows that employees are not nearly as badly off as critics [of pre-invention assignment agreements] have asserted.”

the rewards and can change terms unilaterally due to their greater power.¹⁹⁵ Furthermore, employee inventors only receive rewards for specific inventions but not general inventions.¹⁹⁶ It is reasonable for employers to obtain ownership of specific inventions and to compensate employee inventors by raising salaries or other incentive payments because that is what they are hired to invent.¹⁹⁷

Again, the real problem is with general inventions made partially or wholly with employers' resources that are not specified or instructed by employers.¹⁹⁸ In this situation, employees conceive the ideas alone while employers take no part in the original conception.¹⁹⁹ Courts have held that employers are only entitled to use the invention without paying additional royalty because employers had already contributed sources to help to reduce inventions to practice.²⁰⁰ However, pre-invention assignment agreements are overreaching to require ownership rights of general inventions without providing an opportunity to negotiate or additional compensation to employee inventors.²⁰¹ Therefore, employee inventors are still undercompensated for their interest in general inventions, which contradicts the goal of patent rights: to

195. See Kamprath, *supra* note 21, at 191 (“While these programs seem to address the unfair compensation of employee-inventors, they only mask the problem. Employer defined reward programs are usually discretionary and frequently can be modified at the whim of the employer.”).

196. Employee reward plans and the exit option compensate employee inventors for their specific inventions, *see* Merges, *supra* note 113, at 37-38, but not for their creative idea in general inventions. *See also* Yuval Feldman, *An Experimental Approach to the Study of Social Norms: The Allocation of Intellectual Property Rights in the Workplace*, 10 J. INTEL. PROP. L. 59, 68 (2002) (The current distribution of ownership rights is that “employees get almost nothing for their creativity.”).

197. *Dubilier*, 289 U.S. at 187 (“The reason that he has only produced that which he was employed to invent. His invention is the precise subject of the contract of employment. A term of the agreement necessarily is that what he is paid to produce belongs to his paymaster.”); Feldman, *supra* note 196, at 68 (“given that employers internalize the risks of employing many engineers that invent nothing, it is fair that they should at least get awarded for their better choice.”).

198. *Dubilier*, 289 U.S. at 188 (“[The] distinction between the idea and its application in practice is the basis of the rule that employment merely to design to construct or to devise methods of manufacture is not the same as employment to invent.”).

199. *See id.* (the act of invention “consists neither in finding out the laws of nature, nor in fruitful research as to the operation of natural laws, but in discovering how those laws may be utilized or applied for some beneficial purpose, by a process, a device or a machine.”).

200. *See id.* at 189 (“[Shop right] is an application of equitable principles. Since the servant uses his master’s time, facilities and materials to attain a concrete result, the latter is in equity to use that which embodies his own property and to duplicate it as often as he may find occasion to employ similar appliances in his business.”).

201. *Id.* (Pre-assigning all rights in a general invention is overreaching because it does not serve the goal of the patent law which allows the inventor to exclude all others from benefiting from the ideas he conceived alone).

protect and reward inventors' personal interests "[i]n exchange for making their knowledge public and encouraging technological innovation."²⁰²

Nonetheless, courts interpret these agreements in favor of the employers because of the essential economic form, the corporation, in today's market system.²⁰³ The corporate form of economic activity is "characterized by hierarchical organization and command production."²⁰⁴ Such production-centered spirit "encompass[es] an entrepreneur controlling a variety of inputs, including employees, via a complex of relationships, usually contractual in nature."²⁰⁵ A balanced way is needed to promote the goal of the patent law in a corporate-centered marketplace.

B. Federal and State Legislatures on employee inventions

Similarly-situated federal employees lose their ownership interests in general inventions.²⁰⁶ In 1980, Congress enacted the Bayh-Dole Act, which aimed to regulate the ownership of federally funded inventions nationwide to promote commercialization of valuable academic inventions.²⁰⁷ However, this federal legislation does not solve the conflict created by pre-invention assignment agreements. The landmark case in interpreting the Bayh-Dole Act was *Bd. of Trs. v. Roche Molecular Sys.*²⁰⁸ In that case, the United States Supreme Court was asked whether the Bayh-Dole Act displaced the norm of inventor owned titles and "automatically vested title to federally funded inventions in federal contractors."²⁰⁹

In amicus briefs, both Stanford and the Federal Government argued that the Bayh-Dole Act automatically vested titles to federally funded inventions, in this case, the HIV measurement procedure, in Dr. Holodniy's employer Stanford—the federal contractor.²¹⁰ However, the Court disagreed with this interpretation

202. See Kamprath, *supra* note 21, at 189, 191 ("Mandatory pre-assignment contracts marginalize the 'extraordinary amounts of time, education, training, intellect, energy, and waking and sleeping thought' expended by the employee-inventor in inventing, and this is unfair to inventors.").

203. See Burk, *supra* note 166, at 4 ("Modern theories of the firm, particularly the property-based theories considered here, have evolved in order to explain and justify the presence of organizational hierarchies within the free market system.").

204. *Id.* at 5.

205. *Id.*

206. Pisegna-Cook, *supra* note 59, at 184.

207. Takenaka, *supra* note 124, at 282.

208. *Roche*, 563 U.S. 776.

209. *Id.* at 780.

210. *Id.* at 786 (Stanford contended that "the Bayh-Dole Act reorders the normal priority of rights in an invention when the invention is conceived or first reduced to practice with the support of federal funds.").

of the Bayh-Dole Act.²¹¹ The Act provides that contractors may choose to retain title to any invention listed by the Act.²¹² “Retain” means “to hold or continue to hold in possession or use,” which suggests that the contractor should already have the title to the invention and only then can choose to retain.²¹³ The Court concluded that the Bayh-Dole Act did not automatically vest title to federally funded inventions to contractors.²¹⁴ It simply assured contractors that they may keep title to inventions they already owned.²¹⁵ Nor did the Act authorize contractors to unilaterally take title to any federally funded inventions.²¹⁶

Therefore, the Act is not an instrument to convey ownership interests in federally funded inventions from the employee inventor to the employers; it only addresses an ownership priority between the Federal Government and its contractors – the employers.²¹⁷ The Court further assured that the Bayh-Dole Act did not displace the basic patent law principle that an inventor owns his inventions.²¹⁸ The Court emphasized that “only when an invention belongs to the contractor does the Bayh-Dole Act come into play.”²¹⁹ This ruling suggests that the Bayh-Dole Act does not supersede the federal patent law or state contract law to regulate the allocation of ownership interests in employee inventions.²²⁰

Yet, the ruling did not address the ownership allocation between employee inventors and their employers and left it to the parties themselves to negotiate and arrange the ownership of employee inventions.²²¹ Thus, pre-invention assignment agreements still govern the allocation of invention ownership including the federally funded inventions.²²² The Bayh-Dole Act does not solve the conflict created by pre-invention assignment agreements.

Further, the Federal Patent Act does not extend its regulation

211. *Id.* at 789 (The Court “ha[s] rejected the idea that mere employment is sufficient to vest title to an employee’s invention in the employer,” and thus “a contractor’s invention does not automatically include inventions made by the contractor’s employees.”).

212. *See* 35 U.S.C. § 202(a) (West 2011).

213. *Roche*, 563 U.S. at 789 (“You cannot retain something unless you already have it.”).

214. *Id.* at 789-90.

215. *Id.* at 790.

216. *Id.*

217. *Id.*

218. *Roche*, 563 U.S. at 790, 793.

219. *Id.* at 790.

220. *Id.* at 793.

221. *See* Takenaka, *supra* note 124, at 288 (“[T]he majority adopted an interpretation including only inventions owned by the contractor through a valid and enforceable assignment contract because this interpretation makes every word in the definition meaningful and consistent with a dictionary definition of the word, [“retain”].”).

222. *Id.* at 287.

to pre-invention assignment agreements because state law generally governs contracts.²²³ Even though states' contract law offers ways to challenge parties' agreements, courts are reluctant to sacrifice parties' freedom to contract as discussed before.²²⁴ Some states have enacted statutes to further deter overreaching employers, but only to deter the overreaching on specific inventions.²²⁵ The laws are still vague and unpredictable on the ownership of general invention—which is the area disputed the most.²²⁶ Therefore, U.S. federal and state legislatures leave the allocation of ownership to the parties themselves through pre-invention assignment agreements, without addressing the unequal bargaining power and conflicts that arise in general inventions.

C. Comparison with German Employees' Invention Act

Foreign countries have dealt with the issue of invention ownership as well, and in particular, Germany has found a workable approach.²²⁷ The German law states that employee inventors own inventions made by them.²²⁸ Unlike the U.S. employers obtaining employee inventions through private agreements, Germany takes a statutory approach that an employer can only acquire an employee invention “by specific, individual assignment act and special remuneration for the inventor.”²²⁹

Instead of being controlled by private contract, the allocation of ownership of employee inventions in Germany is set out in the German Employees' Invention Law (the GEIL) and in guidelines for calculating the remuneration (the Guidelines).²³⁰ The GEIL defines

223. Pisegna-Cook, *supra* note 59, at 173. “The Federal Patent Act of 1988 defines patent terms and the rights of ownership, including assignability, but does not address pre-invention assignability; See U.S. Patent Act, 35 U.S.C. §§261-262 (2013).

224. *Cubic*, 185 Cal. App. 3d 438; *Mosser*, 200 U.S.P.Q. 608.

225. *See* note 114-18.

226. Pisegna-Cook, *supra* note 59, at 177-78.

227. *See generally* Jesse Giummo, *German Employee Inventors' Compensation Records: A Window into the Return to Patented Inventions*, 39 RESEARCH POLICY 969, (2010) (introduction to German law on employee inventions).

228. Goddar, *supra* note 127, at 2.

229. *Id.* at 3.

230. *Id.* at 1; Morag Peberdy & Alain Strowel, *Employee's Rights to Compensation for Inventions—a European Perspective*, PLC CROSS-BORDER LIFE SCIENCES HANDBOOK 2009/10, www.cov.com/~media/files/corporate/publications/2010/01/employees-rights-to-compensation-for-inventions---a-european-perspective.pdf (“Germany has had a separate Employees Inventions Act, *Gesetz über Arbeitnehmererfindungen* (ArbnErfG), since 1957, which is accompanied by Ministerial guidelines on the employees' compensation for inventions in the private sector (*Vergütungsrichtlinien für Arbeitnehmererfindungen* (Guideline). The ArbnErfG follows on from previous legislation and case law that recognizes the inventors' right to receive compensation for their inventions from their employers.”).

inventions as technical inventions eligible for patent or utility model protection.²³¹ Unlike the U.S. dividing inventions into specific, general, and private inventions, the GEIL categorizes inventions into service inventions and free inventions. While service inventions are originated from regular work duty or based on work experience, free inventions include all other inventions.²³² Only service inventions made by employees are subjected to the GEIL.²³³ Also, the GEIL has a narrower definition of employees, excluding persons who have an employer-like position such as managers.²³⁴

As long as the employee invention fulfills the definitions, the GEIL obligates employees to “immediately and completely notify” their employers, in writing, of all such qualified inventions, including both service and free inventions.²³⁵ After the notification, employers have a two-month period to object to employees for incomplete information on service inventions, and a three-month period to object to free inventions to be free.²³⁶ Once there is no objection for incompleteness, the employers then have a four-month period to either claim the inventions or release them.²³⁷ After employers claim the invention, the ownership is transferred to the employers.²³⁸ Therefore, employers are deemed to claim ownership of service inventions unless the employer purposely “releases the invention to the employee within the above mentioned four months term, [and then] the invention becomes free.”²³⁹ But, employers have no right to own free inventions unless they determine the

231. Goddar, *supra* note 127, at 3; Mannsfeld v. Evonik Degussa Corp., 10-0553-WS-M, 2011 U.S. Dist. LEXIS 1412, at *19 (Ala. S.D. Jan. 5, 2011).

232. Goddar, *supra* note 127, at 5. For example, a free invention would be a musical instrument invented by a research chemist, whether he invented it during work hours or at home during the weekends.

233. *Id.*

234. *Id.* at 4 (For example, it can be agreed between a company and its managing director in the appointment agreement that inventions made by the director belong to the company at first and without other specific remuneration.).

235. Peberdy & Strowel, *supra* note 230, at 67; Goddar, *supra* note 127, at 5-6 (“The notification must be complete i.e. must enable the employer to get knowledge of the invention, including of the state of the art the invention is based on, the problem which is solved by the invention, the solution proposed by the invention, the contribution of the internal knowledge inside the company to the creation of the invention, and the contribution of possible co-inventors.” Also, the information on free invention must be sufficient for the employer to determine whether it is free invention or not.).

236. *Id.* at 6 (Employers can make further objection if the new notification does not complete the information.).

237. *Id.* at 7 (There are explicit or implicit claims. Employers can explicitly declare that they claim the invention within the four-months period; employers can also implicitly claim the invention by not doing anything at all and waiting for the expiration of the four-month period.).

238. *Id.*

239. *Id.*; Peberdy & Strowel, *supra* note 230, at 67 (“The employer is deemed to claim the invention, unless it specifically releases the invention to the employee in writing within four months from the [complete] notification.”).

inventions are not free.²⁴⁰

After acquisition of ownership, unlike in the U.S., the GEIL requires employers to protect the invention and remunerate employee inventors.²⁴¹ It is the employers' duty to apply for patent or utility model protection in Germany and to provide any details of the application to inventors until the employers pay a reasonable remuneration.²⁴² The GEIL further provides detailed factors and several methods for calculating reasonable remuneration in the Guidelines.²⁴³ The most commonly used one in Germany is the Lump Sum Remuneration calculated based on the Net Present Value formula.²⁴⁴ For a dispute related to employee inventions, the GEIL obligates parties to present disputes first to the Arbitration for Employees' Inventions Board, "consisting of a legal member (judge-like) as chairman and two members with technical experience."²⁴⁵ Only when the parties oppose the Board's proposal on their dispute, can they go to the courts.²⁴⁶

Unlike U.S. practice using pre-invention assignment agreements to allocate ownership in the beginning of employment, the GEIL leaves almost no room for parties to contract around the requirements before employers claiming service inventions.²⁴⁷ After reclaiming service inventions, the GEIL also allows employers to contract with employees to have them agree to relinquish certain rights they have, such as the right to file a patent application in countries where the employers do not want to file.²⁴⁸ New

240. *Id.* at 67 ("If the invention falls within [employer's] field of activity, the inventor must offer the employer a non-exclusive exploitation right before [the inventor] exploits the invention. If the employer does not take up the offer within three months, [the offered] right is extinguished.")

241. Goddar, *supra* note 127, at 8-10.

242. *Id.* at 8-9 (During the application, employers must keep the employee inventor informed about all the decisions and process made on the inventions, for example the decision to apply for a patent or not because of the possibility of trade secret and any applications in foreign countries.)

243. *Id.* at 10-17.

244. *Net Present Value* = $C_0 + C_1/(1+r) + C_2/(1+r)^2 + \dots + C_t/(1+r)^t$. *Id.* at 17-8 ("Where C_0 is the royalty cash flow in the starting year, C_1 in the first year thereafter, and so on, until C_t means the royalty stream in the terminal year of (patent) protected sales. Furthermore, r is the discount rate to be applied, i.e. the average bank interest rate for lending money to be applied.")

245. *Id.* at 18 (For example, if the dispute is on remuneration, the German Patent and Trademark Office would choose the two technical examiners specializing in the same technology and the three-member Board would notify the party of a proposal on a justified remuneration. The proposal becomes binding after a month of such notification if the parties do not oppose to it.)

246. *Id.* at 19.

247. *Id.* ("[T]he binding provisions of [t]he Law cannot be changed by contract between employer and employee to the detriment of the employee, so that practically, before notification and unrestricted claiming of an employees' invention, no pre-arrangements concerning remuneration can be made with any binding character.")

248. *Id.* at 21.

consideration must be offered to buy such renunciation of rights, while in the U.S. no remunerations or any kind of compensation is offered in the pre-invention assignment agreements.²⁴⁹

In university settings, the GEIL protects university employees' inventions, including those made by professors, assistants, and lecturers.²⁵⁰ Non-employees, like students or scholars, are not subjected to the GEIL and thus can be bound by agreements.²⁵¹ Employees must notify the university of service inventions that they intend to publish, and the university must pay the inventor 30% of the gross-income made by the university after claiming the inventions.²⁵²

Heavily regulated by the GEIL, the German way of allocating ownership of patentable invention does not create unequal bargaining positions between employers and employees. The GEIL imposes duties on both parties and mandates a reasonable compensation to employee inventors in exchange for their ideas.²⁵³ However, the rigid rules form other problems, especially high administrative efforts and transactional costs on employers to comply with all the steps and disclosures.²⁵⁴ Many countries used to borrow the German model for employee invention law, but now some are changing their provisions to avoid high transactional costs.²⁵⁵ Moreover, the increasing role of corporations in economic market supports the convenience of employer-held ownerships.²⁵⁶ Therefore, a balance point is needed to provide incentive for innovations through fair compensation to the inventor and at the same time leave ample room for corporations to promote inventions in the marketplace.

D. How Copyright Law Solves Its Rights Allocation Problem: Reversionary Interest

For over two hundred years during the development of reversion rights in copyright, the Copyright Act of 1976 has retained a reversion right as a termination of transfers and licenses

249. *Id.*

250. *Id.*

251. *Id.* at 22.

252. *Id.* (“If the inventor does not wish to publish, like e.g. in cases where he/she considers a publication as detrimental for public security, health, morality considerations etc., there is no duty to notify the invention to the university”).

253. Peberdy & Strowel, *supra* note 230, at 67.

254. Merges, *supra* note 113, at 43.

255. For example, in Japan's 2015 Amendment to the Patent Act and Other Acts, “the employee invention system was reviewed and revised to realize a system that achieves a balance between ensuring proper incentive for researchers and strengthening corporate competitiveness.”

256. Burk, *supra* note 166, at 8, 9.

granted by the author on “any work other than a work for hire.”²⁵⁷ The idea behind this is that authors and their statutory heirs may terminate.²⁵⁸ Then, “with the copyright back in hand and knowledge of its fair market worth, the author has a second opportunity to sell it for a price that better reflects the work’s value.”²⁵⁹

Scholars and cases justify reversion interest with the unequal bargaining power between authors and publishers at the beginning of the grant.²⁶⁰ Similar to employee inventors that are pressed by job opportunities, authors sometimes are under economic pressure.²⁶¹ Moreover, similar to inventions, one can hardly predict the monetary value of copyrightable works accurately prior to their exploitation.²⁶² The principle of reversionary interest to redress authors for their unequal bargaining power has existed not only in the U.S. but also appeared in the British Statute of Anne since 1710.²⁶³ Despite the several amending processes, Congress has

257. See 17 U.S.C. § 203 (West 2002). A “work made for hire” is “(1) a work prepared by an employee within the scope of his or her employment; or (2) a work specially ordered or commissioned for use as a contribution to a collective work, . . . , if the parties expressly agree in a written instrument signed by them that the work shall be considered a work made for hire.” 17 U.S.C. § 101 (West 2010). Based on the language of the first copyright statute enacted in 1790, “if Congress did not intend the rights to return to the author, it is not apparent why it would have made the author’s survival a condition of the vesting of a second term.” Lionel Bently & Jane C. Ginsburg, “*The Sole Right ... Shall Return to the Authors:*” *Anglo-American Authors’ Reversion Rights from the Statute of Anne to Contemporary U.S. Copyright*, 25 BERKELEY TECH. L.J. 1475, 1549-50 (2010).

258. See 17 U.S.C. § 203 (a)(3) (West 2002) (“Termination of the grant may be effected at any time during a period of five years beginning at the end of thirty-five years from the date of execution of the grant; or, if the grant covers the right of publication of the work, the period begins at the end of thirty-five years from the date of publication of the work under the grant or at the end of forty years from the date of execution of the grant, whichever term ends earlier.”).

259. Blackenheimer, *supra* note 132, at 321.

260. See *Stewart v. Abend*, 495 U.S. 207, 218 (1990) (“It not infrequently happens that the author sells his copyright outright to a publisher for a comparatively small sum.” H.R. Rep. No. 2222, 60th Cong., 2d Sess., 14 (1909); *Fred Fisher Music Co. v. M. Witmark & Sons*, 318 U.S. 643, 656 (1943) (“[F]requently [authors] are so sorely pressed for funds that they are willing to sell their work for a mere pittance, . . .”); Melville B. Nimmer, *Termination of Transfers Under the Copyright Act of 1976*, 125 U. PA. L. REV. 947, 950 (1977).

261. *Id.*

262. *Id.* (“The most compelling justification for a reversionary right: an author’s property, unlike other forms of property, is by its very nature incapable of accurate monetary evaluation prior to its exploitation.”); Blackenheimer, *supra* note 132, at 321.

263. *Steward*, 495 U.S. at 218-9 (“The renewal term permits the author, originally in a poor bargaining position, to renegotiate the terms of the grant once the value of the work has been tested.”); see also *Fred Fisher Music Co.*, 318 U.S. at 656 (“The policy of the copyright law, we are told, is to protect the author – if need be, from himself – and a construction under which the author is powerless to assign his renewal interest furthers this policy.”).

retained a reversionary interest in the U.S. copyright law, giving authors an opportunity to exploit their work with a fair market price.²⁶⁴ However, no provision in the patent law or other legislation contains a reversionary interest to employee inventors.

Kamprath suggested that implementing a reversionary interest similar to copyright would be helpful to redress employee inventors with their unequal bargaining power compared to employers.²⁶⁵ His theory is supported by the long established reversionary interest in copyright law because employee inventors are, if not worse, similarly situated to authors.²⁶⁶ Copyrightable works and patentable inventions cannot be fairly valued in the marketplace before publication or before invention, yet that is when publishers and employers acquire all the rights and interests.²⁶⁷

However, different in scope, Kamprath recommended patent reversion apply to inventions created by employee inventors within the scope of employment, which included both specific and general inventions.²⁶⁸ In copyright law, reversionary interest does not apply to works for hire.²⁶⁹ Kamprath argued that this limitation considerably restricted application and usefulness of the reversionary right, and thus proposed to apply patent reversion to any invention made within the scope of employment.²⁷⁰ This proposal undermines a significant role of corporate employers in today's economic market.²⁷¹ It also blurs the line between specific inventions and general inventions which are the essence of the debate.

Furthermore, Kamprath suggested a joint ownership between employee inventors and their employers after the reversion.²⁷² He argued that a joint ownership would not exclude the employers entirely.²⁷³ Then, he acknowledged a potential limitation on employee inventors' future licensing of patent especially where there are joint owners.²⁷⁴ Because an employee inventor can only

264. Blanckenhimer, *supra* note 132, at 321 ("Because an author's initial bargaining position with a publisher may be relatively weak, Congress has consistently given the author the right to regain his copyright after the work has already been published and exploited on the market."); Nimmer, *supra* note 260, at 950.

265. Kamprath, *supra* note 21, at 202.

266. As shown *supra*, notes 178-80, 260-62 and accompanying text.

267. As shown *supra*, notes 178-80, 260-62 and accompanying text.

268. Kamprath, *supra* note 21, at 204.

269. 17 U.S.C. § 203(a) (West 2002).

270. Kamprath, *supra* note 21, at 204.

271. *See generally* Burk, *supra* note 166 (firms certainly have advantages in dealing, managing, and promoting the value of intellectual properties compared to individuals in today's economy).

272. Kamprath, *supra* note 21, at 203.

273. *Id.* at 204 (reasoning that joint owners "may make, use, offer to sell, or sell the patented invention within the United States, without the consent of and without accounting to the other owners") 35 U.S.C. § 262 (West 1994).

274. *Id.* at 204-05.

license interest he or she holds, a partial interest in the patented invention is less attractive to a prospective licensee.²⁷⁵ Regardless, he argued that these potential problems would encourage negotiation among joint owners, especially employers, to buy out the interest from employee inventors at market price.²⁷⁶

However, in patent, the concept of joint ownership is to give each joint inventor equal ownership interest and undivided share in the whole patent as tenants in common.²⁷⁷ To be qualified as a joint inventor, courts have required that “one had to contribute in an original manner to the concept of an idea, not merely exhibit the knowledge of one skilled in an inventive art.”²⁷⁸ This idea seems fit if Kamprath only proposes a joint ownership in specific inventions as employers offer ideas or guidance on specific inventions that employee inventors were hired to invent.

However, without excluding general inventions, Kamprath offered to let employers and employee inventors jointly own any invention within employment scope.²⁷⁹ The worry about joint ownership is that “a person may become a joint inventor because of a minor contribution to an invention, yet obtain ownership rights commensurate with every other joint inventor on the patent.”²⁸⁰ Specifically, when employers are given joint ownership on general inventions, they still get equal ownership interests while only contributing financial support rather than ideas that actually qualify for a joint inventor status. Furthermore, employers would also gain additional leverage through a joint owner status to prevent a joint owner employee from suing an infringer because all joint owners must be voluntary parties to an infringement lawsuit.²⁸¹ Thus, unequal bargaining positions would still exist between employers and employee inventors after the patent reversion proposed by Kamprath.

In conclusion, the employee inventions debate is centered on ownership rights in general inventions. The conflict arises because of the right to freedom of contract. On the other hand, Germany imposes statutory duties and procedures for invention assignments that create a different set of problems but effectively eliminate employers from overreaching. Therefore, the United States should follow the copyright law and create a statutory right to employee inventors at a minimum cost of freedom of contract between the parties.²⁸²

275. *Id.* at 205

276. *Id.*

277. Joshua Matt, *Searching for an Efficacious Joint Inventorship Standard*, 44 B.C. L. REV. 245, 246 (2002).

278. *Id.* citing to Donald D. Chisum, *Chisum On Patents* § 2.02[2], at 2-5 to 2-7.

279. Kamprath, *supra* note 21, at 203-05.

280. Matt, *supra* note 277, at 247.

281. *Id.* at 246-47.

282. *See* Kamprath, *supra* note 21, at 208 (“While close scrutiny should be

IV. PROPOSAL

The current legal principle that governs employee inventions in the United States is the law of contract. The broad assignment of any type of employee inventions to employers leads to disputes and conflicts between the traditional principle of patent law and the values in the workplace. The dispute is between scholars arguing for employers, including corporate entity, and scholars arguing for employees. In recognizing the importance of the essential role of corporate employers in today's economic market, this comment agrees with Kamprath that a statutory reversion of patent ownership rights would help to redress employee inventors at the minimum cost of freedom to contract. This section will build upon Kamprath's statutory patent reversion theory and propose additional amendments to the theory to balance the unequal bargaining power created by the freedom of contract.

In line with Kamprath, this comment suggests that the United States should create a statutory right of patent reversion to help redress employee inventors' passive positions when signing pre-invention assignment agreements, and to compensate them with a right to exploit their patents for two years before the patents expire.²⁸³ Similar to the goal of reversionary interest in copyright law, as Kamprath proposed, the goal behind a patent reversion is to impose a statutory requirement that the pre-assigned inventions would revert back to employee inventors.²⁸⁴ Section 154 (a)(2) grants the patentee twenty years of exclusive right on inventions.²⁸⁵ Agreeing with Kamprath, patent reversion may be effected in the last two years of the patented period notwithstanding any previous agreement to the contrary.²⁸⁶ In addition to effectuate the reversion, this comment also agrees with Kamprath that the original employee inventor is required to send written notice of exercising such reversionary right to the employer and USPTO at least six months before the reversion period.²⁸⁷

given to such a hard-paternalistic intervention by the government, the unequal bargaining power of the employee-inventor and the adhesion-like pre-assignment contracts indicate a failure of the employment market, and public policy calls for some regulation to intervention.”).

283. *Id.* at 202. The two-year period is proposed based on an assumption that an employer's exclusive exploitation of a patent in the first eighteen years would earn back the earlier costs and would have make a profit.

284. *Id.* at 203.

285. 35 U.S.C. §154(a)(2) (West 2015).

286. Kamprath, *supra* note 21, at 203. Kamprath proposed a two-year reversion period and suggested that future economic data might indicate a more appropriate period of time if patent reversion would be adopted. *Id.* (footnote 126).; *see also* the 1976 Copyright Act, 17 U.S.C. § 203(a)(5).

287. *Id.* at 206. Kamprath also proposed that in order for the reversion to occur, an “advance notice of intent to have a reversion would need to be served

However, disagreeing with Kamprath's proposal that patent reversion should apply to all inventions that fall within employment scope, this comment proposes that patent reversion only apply to general inventions made by employees. In addition, instead of joint ownership after patent reversion proposed by Kamprath, this comment suggests keeping the common law way that employers acquire a shop right during the two-year reversion period. The aim of these amendments is to help balance the need to fairly compensate employee inventors on their inventive ideas with the need to not be overbearing on employers and firms, and also not to unduly interfere with the parties' freedom to contract.²⁸⁸

Proposed by Kamprath, patent reversion would help equalize the bargaining power between employees and employers, and compensate employees more accurately with an accessible market value.²⁸⁹ This comment agrees with Kamprath that a statutory enforcement on reversion increases employee inventors' leverage and thus stimulates employers to negotiate about the use of patents for the last two years.²⁹⁰ The main logic behind Kamprath's theory for patent reversion is that employers have greater power initially to obtain everything through employer defined contracts.²⁹¹ A statutory enforcement disregarding any agreement to the contrary puts up a caution sign to employers, and the advance notice requirement gives employers time to take actions before reversion actually occurs.²⁹² After eighteen years of exploiting and using the patent, if the patent is so essential to the business that exclusive ownership is required, the employer is then motivated to make

on the employer and the USPTO and upon serving the notice, the future reversion rights would vest with the employee-inventor." *Id.* He also set up a notice period ranging from six to twelve months. *Id.*

288. *Id.* at 199.

289. *Id.* at 203-04.

290. Kamprath proposed joint ownership after patent reversion because "a joint ownership patent reversion requires both parties to work together to fully exploit the value of the patent during the reversion period." *Id.* at 204. For joint ownership, "each of the joint owners of a patent may make, use, offer to sell, or sell the patented invention within the United States, without the consent of and without accounting to the other owners." 35 U.S.C. § 262. This right allows each co-owner to exploit the patent without negotiation with other co-owners. Therefore, in order to promote negotiation between employers and employees, employers are left with only a shop right after patent reversion.

291. Kamprath, *supra* note 21, at 187 ("Because of their asymmetrical bargaining power, the technology companies can usually demand all prospective employees sign such an assignment of patent rights."); *Id.* at 208 ("The majority of employee-inventors, however, are required to sign pre-assignment agreements as prerequisites to employment. Thus, the relationship between the parties does not truly allow both parties to freely negotiate their contract terms in the first place.").

292. *Id.* at 208 ("By limiting the scope of the reversion, the inequality in the bargaining power of the employee-inventor is reduced while not over-empowering him at the same time: both of the parties are on more equal footing from the beginning of their relationship.").

another offer to the employee to buy the patent for the last two years, just like dealing with other businesses or partners.²⁹³

However, differing with Kamprath's suggestion on joint ownership as a tool to get to the final buy-out negotiation, this comment argues that a shop right is a better choice as motivation while at the same time avoiding the problems created by a joint ownership. With a shop right, employers who value an exclusive ownership on the patent would have more incentive to buy out instead of a joint ownership that still grants employers equal ownership interests to exploit the patent without the need to consult co-owners. Otherwise, employers might be satisfied with holding a shop right to the patent if it is not valued as much, and thus the employee inventors would have a more complete ownership in their own patent for future exploitation, rather than pieces of ownership interest under a joint ownership.

At the same time, in either scenario, employee inventors would be fairly compensated. Kamprath also predicted that in the end of the patent period, both parties would know the market value of the patent "with precision by measuring sales of products that incorporate the invention, market share, and other financial data."²⁹⁴ If the employer makes an offer to buy out the patent, there is a well-defined and accurate number to negotiate with that will prevent unfair oppression on price by the employer. If the employer decides to hold a shop right, the employee then can exercise all the control over the patent to invest as the employee sees fit.

A two-year reversionary interest would not unduly burden the freedom to contract. Agreeing with Kamprath that patent reversion is a limited statutory right requiring affirmative actions from an employee inventor by giving advance notice.²⁹⁵ An employee inventor has the option to exercise reversion or not, depending on how valuable he sees the patent. Furthermore, this comment proposes further limitations on patent reversion than Kamprath's theory. This comment insists that reversion should be narrowly tailored to redress the unfairness in general inventions and is not applicable to specific inventions or private inventions.²⁹⁶ Specific inventions are not covered, and thus employers can still acquire

293. For example, the employer can do nothing and allow the employee inventor to license the patent. *See* Kamprath, *supra* note 21, at 204. The employer can also choose to work with the employee inventor in planning business activities with the invention. *Id.* Or, the employer can buy the last two years of the patent rights to be able to continue the exclusive use. *Id.*

294. *Id.* at 203.

295. *Id.* at 206.

296. Limitation of patent reversion to general invention is similar to the exclusion of work for hire in termination of transfer in copyright law. *See id.* at 202 ("While the reversion in copyright is beneficial to authors, it is severely limited by its inapplicability to works made for hire, which are works prepared by an employee within the scope of his or her employment or a work specifically ordered or commissioned.").

specific inventions made by employees through pre-invention assignment agreements without any additional compensation. Also, private inventions are not affected by patent reversion. Thus, if the inventor contracted his/her private invention to the employer, the ownership would not revert back to inventor.²⁹⁷

Patent reversion only on general inventions would not stimulate employee hold-up that increases unnecessary transactional cost for employers. Kamprath explained that, theoretically, an employee holdup problem might occur during the buy-out negotiation, but the possibility of occurrence is small.²⁹⁸ Supplementing Kamprath's argument, this comment suggests three reasons that hold-up situations are rare. First, to some extent, the known market value of the patent not only prevents employers from intentionally underestimating a buy-out price, but also checks employees from arbitrarily increasing price. Second, the longer the employee holds up, the less the value of the patent. In particular, when a third-party buyer is the cause of the holdup because the employee is trying to wait and see whose price is higher, the employee might lose both the buyers and the employer in the end. Third, in today's fast-paced economy, new inventions might come out as replacements during the holdup period, thus rendering the patent completely valueless. Therefore, it is impractical for a reasonable employee to hold up.²⁹⁹

Furthermore, patent reversion on general inventions would not distract employees from job related tasks. Keeping Kamprath's suggestions that the patent reversion period is the last two years in twenty years of exclusive rights.³⁰⁰ It is a remote interest that would not play a leading role in an employee's everyday thoughts. Also, most employees might not be aware of the reversionary right until they make a general invention and deliberately consider its value. Besides, patent reversion does not prevent employers from carrying out reward programs for specific inventions instructed by them.³⁰¹ Moreover, employers usually have concepts for their business and products which they instruct their employees to invent, but they would also benefit from new ideas their employees came up with, when such ideas promote the business or develop the current

297. *Contra. id.* at 203-04 (Kamprath proposed a reversion on all the patent rights assigned to the original employer without the distinction between specific inventions and general inventions).

298. *Id.* at 210.

299. Kamprath also suggested employee holdup was improbable and impractical. *Id.* at 209. He reasoned that "the employer would probably be in the best financial position to offer the largest licensing fee to the employee-inventor." *Id.* at 109-10. Also, he thought that "a holdup could occur in situations of employee-inventor spite or economically illogical behavior," which are not usual occurrences. *Id.* at 210.

300. *Id.* 203.

301. *See supra* note 196 (companies' reward programs are mainly on specific inventions).

products.

Kamprath also mentioned that employers might be concerned about compensation and reversion for derivative inventions which are invented based on improvements to an underlying patent.³⁰² A patent reversion on a general invention might also encounter such concern because many general inventions are developed from employee inventors' own ideas on an improvement of an underlying patent that the employee encountered at work.³⁰³ In addition to Kamprath's analysis that employers are in a better position, as they have all the resources and documents to value the invention products, a beneficial improvement is a great incentive for an employer to buy out the derivative invention.

Therefore, a patent reversion is a limited statutory right imposed to help balance the unequal bargaining power and any under compensation experienced by employee inventors. It is limited to the issue of general invention and thus would not unduly burden the parties' freedom to contract. It would be a stronger incentive for employers to buy out the last two years of a general invention ownership from employee inventors, thus giving the inventors a fair compensation.

V. CONCLUSION

This comment revisited the history and development of the laws on employee inventions. The legal history suggested that the allocation of ownership on employee inventions is a reconciliation of different principles: the hierarchy of employment relationships, the value of an individual's intellectual property, the freedom to contract, and the belief of fair compensation.³⁰⁴ The practice of pre-invention assignment agreements favors employers giving them contractual power to control employee inventions. The current structure of the market manifests a favor towards employers to own specific inventions that are proposed by them. However, broad assignment of all employee inventions without compensation creates unfairness especially in the assignment of general inventions that are conceived solely by the employee inventors and are reduced into practice using an employer's resources.

Developing on Kamprath's patent reversion theory, this comment proposed patent reversion on general inventions made by employees for the last two-year period before the patent expires, while employers retain a "shop right" on the patent. Aiming to compensate employee inventors more fairly, patent reversion would stimulate employers to buy the last two years of the patent from employee inventors at an accurately defined market value or would

302. Kamprath, *supra* note 21, at 212-13.

303. *See supra* note 79 and accompanying text.

304. Fisk, *supra* note 18, at 1134-35.

revert all ownership rights to employee inventors to exploit their patent. Therefore, patent reversion on general inventions would balance the unequal bargaining power created by pre-invention assignment agreement and compensate employee inventors for their contribution, thus creating more incentive to innovate.