Copyright Protection for Patents: Some Surprising Implications for Artificial Intelligence

Dean Alderucci
Carnegie Mellon University

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COPYRIGHTS PROTECTION FOR PATENTS: SOME SURPRISING IMPLICATIONS FOR ARTIFICIAL INTELLIGENCE

Dean Alderucci*

Abstract

Over the course of two centuries the U.S. patent system has generated an expansive compilation of millions of patents, each explaining how to make and use patented technology. Collectively these documents describe the details of inventions in virtually every field of science and engineering, representing a technical database crowdsourced from a global community of inventors. Although this corpus of technical knowledge was originally designed for its role in the U.S. patent system, contemporary Artificial Intelligence ("AI") and Natural Language Processing ("NLP") technologies allow patent text to be used in many productive new ways.

In this Article I describe how AI technologies could utilize the patent database to enrich the patent offices, patent owners, and public. AI tools could, for example, use the information contained in millions of patents to answer a wide range of questions about specific technology, provide textual summaries of an area of technology, generate informative abstracts of particular patents, and even assist in drafting patents or technical documents.

However, there are legal obstacles to fully realizing this potential. Since many AI-enabled services would require copying and creating derivative works of patent documents, we must consider to what extent copyright might impede these services. Because some AI uses of patent documents are expressive rather than non-expressive, fair use is not as clearly availing as in other AI applications analyzed by legal scholars. I demonstrate that although a patent document constitutes copyrightable subject matter, fair use and other legal doctrines reduce, and might even eliminate, the benefits of copyright protection for patents. Nevertheless, given the chilling effect of the lack of legal clarity, policy changes should be made to remove legal obstacles to the creation of beneficial new AI services.

I. INTRODUCTION ..................................................................................... 792

* Dean Alderucci is the Director of Research for the Center for AI & Patent Analysis at Carnegie Mellon University. He was previously Chief IP counsel for a global financial services firm, and before that Chief Counsel for a business incubator. New York University School of Law LL.M.; Columbia University M.S. in Computer Science; Columbia University M.S. in Operations Research.
I. INTRODUCTION

Much of the U.S. patent system involves processing, analyzing, and disseminating of patent documents. A patent document includes text and drawings that are included in a patent application filed with the U.S. Patent and Trademark Office ("PTO"). Over the course of over two centuries the U.S. patent system has generated an expansive compilation of millions of patents and patent applications. Each week more than ten thousand new patent applications are filed.
in the United States alone,\(^4\) and the number of granted patents continues to increase at a growing rate. Of the roughly ten million U.S. utility patents in existence, half were granted in just the last twenty five years.\(^5\) The PTO typically publishes a patent application eighteen months after it is filed.\(^6\) If the application is granted, the PTO also publishes a patent that is almost identical to the application, subject to any amendments\(^7\) made after the application was filed. Both published applications and patents are freely available via a number of online electronic databases, including via the PTO’s patent search engine.\(^8\) Every patent explains how to make and use the patented technology. Collectively these documents describe the details of inventions in virtually every field of science and engineering, representing a technical database crowdsourced from a global community of inventors. Publication of patents and applications serves one of the primary functions of the patent system: to disclose the details of novel inventions to the public.\(^9\)

Artificial Intelligence ("AI") technologies could utilize this database in novel ways to enrich patent offices, patent owners, and the public. In particular, recently-developed techniques from the AI subfield of Natural Language Processing\(^{10}\) ("NLP") could use the information contained in millions of patents to provide various services, such as answering a wide range of user questions about specific technology, providing a textual summary of an area of technology, generating informative abstracts of a particular patent, and even drafting patents or technical papers. Examples of AI-enabled services are described in Section II.A below.

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\(^6\) 35 U.S.C.A. § 122(b); see infra Section IV.A.

\(^7\) 37 C.F.R. § 1.121 (2021).


\(^9\) Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 481 (1974); see also infra Part II.

\(^{10}\) Natural Language Processing involves computer processing and manipulating of the text of "natural" languages, such as English or Spanish. DANIEL JURAFSKY & JAMES H. MARTIN, SPEECH AND LANGUAGE PROCESSING 30–31 (2d ed. 2008); see also Dean Alderucci, The Automation of Legal Reasoning: Customized AI Techniques for the Patent Field, 58 DUQ. L. REV. 50, 54–56 (2020).
Although AI systems could use the text of patents in new and productive ways, copyright concerns could hinder initiatives to bring such tools to fruition. The outputs of the new AI systems would require copying sentences or paragraphs from patent documents. For example, many NLP summarization and question-answering techniques locate and copy the most relevant sentences from a document as their output. Patent documents fit comfortably within the definition of works which are subject to copyright since they include text and often drawings, both paradigmatic examples of copyrightable subject matter. Indeed, the PTO regulations contemplate copyrights in patent documents by permitting the patent applicant to place a copyright notice in the patent application adjacent to copyrighted material. Thousands of patents include a statement that some portion of the document contains material which is subject to copyright protection. These statements clearly indicate that the patent applicants desire to preserve some of the benefits of copyright protection for material in their patent documents. In addition, patent documents are often drafted by patent attorneys or patent agents who invest a substantial amount of time in crafting the appropriate legal protection for the invention. In this sense patent documents are very much like other copyrightable documents that attorneys create in the course of legal representation.

The copyright laws give creators the right to prevent unauthorized copying of their works and various other activities. Of particular note in this article is the copyright owner’s exclusive right to create derivative works, i.e., new works such as abridgements or modifications of the copyrighted work. Many of the AI services described in this article would create derivative works of the patent document, an act which might infringe the copyright in the patent document. If so, this would have a chilling effect on the development of AI technologies that utilize the patent database as an information source. In light of the purported legal obstacles, I describe several significant but previously

11 37 C.F.R. § 1.71(d); see also infra notes 102–103 and accompanying text.
12 Of all utility patents issued from 2000 to 2020, over 33,000 include the text “copyright owner has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records,” which is the copyright notice required by the PTO regulations. See Relationship Between Design Patent, Copyright, and Trademark, U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/web/offices/pac/mpep/sl512.html (last visited Mar. 1, 2021); see also infra note 103 and accompanying text.
13 A patent agent is someone who is not an attorney but has been authorized to practice before the PTO. 37 C.F.R. § 11.6(b) (2021). Patent agents and patent attorneys are permitted to draft and file patent applications with the PTO on behalf of clients. Id. § 11.5(b)(1). For simplicity this Article uses the phrase “patent attorney” hereinafter to denote both patent attorneys and patent agents.
14 See infra Section III.A.
15 17 U.S.C.A. § 106 (West 2021); see also infra Part III.
unrecognized limits on the extent of U.S. copyright protection for patents. A number of doctrines in patent and copyright law interact in interesting ways to reduce, if not eliminate, the impediments posed by copyright protection for patents. Some doctrines serve to curtail the scope of copyright protection while others create subtle risks for the copyright owner who asserts their copyright in a patent document. Notably, while much scholarly analysis has focused on certain AI uses permitted as non-expressive fair use, less scholarship has focused on the expressive uses of text by AI such as those described here, e.g., to create new patent applications or summaries of patent applications. Finally, I present some policy recommendations that would help remove legal barriers to AI-enabled patent services.

To motivate the legal analysis, Part II outlines examples of AI services empowered by the text in patent documents. Part III describes the respective policies underlying the patent and copyright systems, as well as the policy conflict caused by copyrights for patents. Most notably, the patent system uses patent documents to freely disseminate technical information to the public, but copyright in patent documents hinders that dissemination by impeding the copying of patent documents. I explore in Part IV the scope of copyright protection for patent documents, and how productive activities by AI technologies are at risk of copyright infringement. In Part V I demonstrate that there are numerous legal and practical impediments to asserting any copyright in a patent document. Copyright doctrines such as fair use curtail copyright protection for patent documents, while other doctrines would imperil patent rights if a copyright in a patent document is asserted. Part VI concludes with policy recommendations that would remove legal obstacles to a new generation of AI tools for public benefit.

II. EXAMPLE AI SERVICES USING PATENT TEXT

Various AI applications could use the information and text contained in millions of patent documents to provide the public with a number of new and productive services. Four motivating examples are provided below to give shape to the legal analysis that follows. No doubt additional AI applications are possible, and as NLP advances the breadth and capabilities of patent-enabled services will expand as well.18

17 The analysis in this Article addresses only the extent of U.S. copyright protection for U.S. patents and patent applications. At least one article deals with copyright protection for patents under a then-recent change in Australian law. See Ben McEniery, Addressing the Impediments Copyright Imposes on the Use of Patent Specifications and Prior Art Documents to Improve Patent Quality, 11 NW. J. TECH. & INTELL. PROP. 643 (2013).

18 In a manuscript currently under development I will provide a comprehensive description of several new AI services that could utilize the patent database and implementation details of those services. Aside from the examples presented briefly in Part I the present article focuses on the legal framework for enabling such AI services.
A. AI Application #1: Automatically Generated Summaries

The subfield of computer science that deals with “automatic summarization systems” involves systems that extract the most important information from a document and present it to the user in condensed form.19 For example, automatically-generated summaries of news articles allow readers to quickly review a few sentences rather than several pages, and automatically-generated case summaries allow legal researchers to quickly skim judicial decisions in a search for relevant case law. Another obvious use of this AI technique is to automatically summarize the contents of a specific patent to relieve the reader from perusing several pages of technical material. A less intuitive use would be to describe the state of the art in an area of technology by summarizing select portions of several patents. This would be analogous to describing the day’s news by summarizing various news sources, which contemporary NLP algorithms can do proficiently.20

A set of patents in a field often describe the same technology.21 For example, a set of patents for novel computer security technologies might all describe background or foundational technologies such as networks, firewalls, computer viruses, and encryption. AI software could use these descriptions to automatically summarize whichever background technology the user requested. One could envision a software-generated report created from the backgrounds of dozens of patents describing the state of the art in semiconductor manufacturing, or describing all alternative methods of manufacturing a particular pharmaceutical compound. Such summaries would convey knowledge to the reader more concisely and directly than if the reader had to search through several patents to locate those that described the desired background technology.

State-of-the-art AI could condense information from patents into a description as terse as a few sentences or as extensive as several pages. It would also be possible to provide summaries at different levels of technical difficulty, from layperson to technical expert. As NLP becomes more powerful, software-

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21 A patent can include a “Background of the Invention” section. 37 C.F.R. § 1.163(c)(6) (2021). This section can describe the state of the prior art relevant to the invention. Content of Provisional and Nonprovisional Applications § 608.01(c), U.S. PAT. & TRADEMARK OFF., https://www.uspto.gov/web/offices/pace/mpsip/s608.html#d0e44561 (last visited Mar. 12, 2021).
generated technical summaries will become faster and cheaper replacements for their human-generated counterparts.

B. AI Application #2: Automatic Question Answering

Another AI use of patent documents is in automated Question Answering ("QA"). A QA system is designed to answer questions that users pose in natural language, i.e. the way a person would naturally ask a question of another person. A QA system draws upon one or more sources of information, such as Wikipedia articles or other text on the World Wide Web, to locate the information required to answer the question. QA technology embedded in search engines such as Google search provide users with direct answers to questions in addition to web pages relevant to the question. For example, entering the query "When was George Washington born?" into the Google search engine elicits the answer in large type font at the top of the search results page, followed by several web pages that provide facts about George Washington.

A QA system backed by the patent database could answer technical questions about technology described in any patent, whether that technology is provided as background material or as a novel patented advancement. Such questions could request a definition (e.g., "What does TCP/IP mean?"), query the state of the art in a field (e.g., "What materials can be used in transparent solar panels?"), ask how to create a type of technology ("How can 1,2-dichloroethane be synthesized?"), or determine how technology is used ("What can a magnetometer be used for?"). A system that answers a user's questions is obviously superior to requiring the user to read an entire document hunting for the desired answer. A QA service of this nature would provide users with a new manner of consuming the information in the corpus of millions of U.S. patents documents.

C. AI Application #3: Reusable Technology Descriptions

QA systems described above could utilize the background portions of patent documents to answer questions about standard technological components. A similar application could use backgrounds to assist attorneys in drafting new patent applications. Natural language generation is an NLP technique that generates sentences that mimic the style of text shared by a corpus of

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23 See JoRaFksy & MrArtin, supra note 10, at 779–801.

24 See supra note 21.
Patent attorneys could use a natural language generation tool to create text describing the requisite details of the standard technological components that are common to thousands of inventions, such as hard drives, DC motors, and gasoline engines. The tool would leverage sentences, paragraphs, or entire pages extracted from the backgrounds of one or more patents describing such components.

Many patent documents describe the same standard components in different but essentially equivalent ways. Rather than having the community of drafters repeatedly recreate common technical descriptions, it would be much more efficient for AI to generate one or more descriptions from which patent attorneys could select the most appropriate. The drafter of a new patent application clearly saves time by reusing portions of previous patents. Drafting entirely new descriptions of those components is time consuming and can be error prone if due care is not exercised. More importantly, AI drafting software that automatically reused portions of earlier patents would benefit the public. Having more uniform descriptions of technology across multiple patents would make it easier to locate patents in a search; since patents would employ the same text and terminology the universe of search keywords would be narrower. Identical descriptions would also facilitate comparison of the two patents, and would allow the public to more easily identify which components were identical, thereby avoiding time wasted in rereading and interpreting different patents.

Moreover, an AI tool that assembled a library of standard technology descriptions to choose from would be analogous to the mechanisms used to share software components among a community of software developers. Just as open-source development facilitates software creation, a library of standard technology descriptions would make the patent drafting task much easier and cheaper. More importantly, it would eliminate the socially wasteful practice of numerous patent drafters continually rewriting descriptions of the same background technology. It would also allow the drafter to think at a higher level, rather than become bogged down in the task of selecting the proper words and phrasing to describe well-known components.


D. AI Application #4: Automated Drafting of Improvement Patents

The concept of a library of technology descriptions can be extended to entire inventions. Specifically, AI could help attorneys draft patent applications for improvement inventions using earlier patents to build upon. An interesting aspect of technological progress is that two different inventors can create related inventions: an original invention and a subsequent improvement to the original, both of which can be separately patentable and each patent can be owned by different assignees. The patent for the improvement might need to describe numerous technical details already explicated in the patent for the original invention. The most straightforward strategy in drafting the patent application for the improvement might be to copy portions of the original patent document, and add paragraphs as necessary to describe the features that have been improved. An AI tool could greatly assist the drafter by automatically selecting: (1) the portions from the original patent document that should remain unchanged in the improvement, and (2) the portions of the original patent document that require revision or replacement because they relate to the new improvement. Describing the improvement could require just a few paragraphs more than the description of the original invention.

Drafting an improvement patent from a previous patent would be analogous to the Jepson claim format, in which a claim is composed of portion describing conventional or known elements and a separate portion describing the improvement. This format makes the claim easier to understand and examine. Likewise, if AI software created a “Jepson patent,” other software could easily identify for the user which material originated in the previous patent and which material constituted the improvement. Not only would creating an improvement patent from a prior patent save time and effort, it could also strengthen the patent rights in the improvement. Notably, if the patentee of the original invention asserted its copyright against the patentee of an improvement, the original patentee might not be willing to use all of the invalidation techniques that are normally available.

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31 Since the improvement patent has much in common with the original patent, certain invalidation attacks against the improvement patent would apply with equal force to the original patent. For example, if the text in common between the two patents was potentially ambiguous or
Each of the example AI systems described above involve copying sentences or paragraphs from patent documents in a manner that might give rise to a claim of copyright infringement. Accordingly, we must analyze the extent to which copyright law might impede development of such AI systems. We begin this analysis by reviewing the policies underlying the patent and copyright laws, as these policies shape both the infringement analysis as well as the policy recommendations that follow.

III. PATENT AND COPYRIGHT POLICIES

Every U.S. patent must satisfy the enablement requirement, which requires that the specification of the patent describe "the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same." The purpose of this requirement is to place the subject matter of the patent "generally in the possession of the public." A patent fails this enablement requirement if the specification would not permit the person of ordinary skill in the art to practice the invention without "undue experimentation."

The enablement requirement is designed to convey knowledge to the public. Dissemination of the technical information contained in patents permits society to make and use the patented invention after expiration of the patent. Moreover, since a patent application is typically made available to the public soon after filing, its disclosure is most often made available to the public years

incorrect, both patents would be susceptible to invalidation for the same reason. Specifically, if the incorrect text failed to convey critical technical information about the invention, the patent would be susceptible to invalidation for failing to enable one of ordinary skill in the art to practice the invention without undue experimentation. See, e.g., ALZA Corp. v. Andrx Pharms., LLC, 603 F.3d 935, 940 (Fed. Cir. 2010).

33 Id.
34 Spectra-Physics, Inc. v. Coherent, Inc., 827 F.2d 1524, 1532 (Fed. Cir. 1987).
35 In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988).
36 See Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 481 (1974) (stating that information disclosed in a patent adds to the "general store of knowledge"); Graham v. John Deere Co., 383 U.S. 1, 6 (1966) (noting that the Intellectual Property Clause of the Constitution, U.S. Const. art. I, § 8, cl. 8, requires that patents add to knowledge); In re Argoudelis, 434 F.2d 1390, 1394 (C.C.P.A. 1970) (Baldwin, J., concurring) (stating that the full and complete disclosure of how to make and use the claimed invention "adds a measure of worthwhile knowledge to the public storehouse").
38 Most utility patent applications are published 18 months from the date of filing or earliest priority date. 35 U.S.C.A. § 122(b)(1) (West 2021). Applications are not so published if the invention will not be the subject of a patent application in another jurisdiction and the patent applicant requests that the application not be published. Id. § 122(b)(2).
before the patent term expires. This permits the public to productively use the technical information to design around the patented invention and otherwise to create new inventions. In addition to providing technical enrichment to the public, patent documents also serve to convey valuable signals about the invention and about the company that created it. Such signals can allow others to guess the research that the company will conduct and what product lines it might create or expand.

The disclosure of the invention to the public is often characterized as the quid pro quo for the grant to the inventor of the right to exclude. Under this theory, patent rights are awarded as an incentive to disclose rather than keep the details of the invention secret. The disclosure function of the patent system is designed to disseminate technical information to the public via patent

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40 See Kewanee Oil Co., 416 U.S. at 481 (stating that the information disclosed in patents “will stimulate ideas and the eventual development of further significant advances in the art”); Jeanne C. Fromer, Patent Disclosure, 94 Iowa L. Rev. 539, 548–49 (2009).
42 Mark A. Lemley, Rational Ignorance at the Patent Office, 95 Nw. U. L. Rev. 1495, 1505–06 (2001) (“Venture capitalists use client patents ... as evidence that the company is well managed, is at a certain stage in development, and has defined and carved out a market niche.”).
43 See Long, supra note 41, at 648.
44 See, e.g., Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 736 (2002) (“[E]xclusive patent rights are given in exchange for disclosing the invention to the public.”); J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc., 534 U.S. 124, 142 (2001) (“The disclosure required by the Patent Act is ‘the quid pro quo of the right to exclude.’” (quoting Kewanee Oil Co. v. Bicron Corp., 416 U.S. 470, 484 (1974))); Pfaff v. Wells Elecs., Inc., 525 U.S. 55, 63 (1998) (“[T]he patent system represents a carefully crafted bargain that encourages both the creation and the public disclosure of new and useful advances in technology, in return for an exclusive monopoly for a limited period of time.”); Bonito Boats, Inc. v. Thunder Craft Boats, Inc., 489 U.S. 141, 151 (1989) (“In consideration of its disclosure and the consequent benefit to the community, the patent is granted.” (quoting United States v. Dubilier Condenser Corp., 289 U.S. 178, 186–87 (1933))); Kewanee Oil Co., 416 U.S. at 481 (additions from patent disclosures “to the general store of knowledge are of such importance to the public weal that the Federal Government is willing to pay the high price of 17 years of exclusive use for its disclosure”); Sinclair & Carroll Co. v. Interchemical Corp., 325 U.S. 327, 331 (1945) (“[The patent system’s] inducement is directed to disclosure of advances in knowledge which will be beneficial to society; it is not a certificate of merit, but an incentive to disclosure.”); Universal Oil Prods. Co. v. Globe Oil & Refin. Co., 322 U.S. 471, 484 (1944); Grant v. Raymond, 31 U.S. (6 Pet.) 218, 247 (1832) (“[A] correct specification is necessary in order to give the public ... the advantage for which the privilege is allowed, and is the foundation of the power to issue a patent.”).
documents, promote technological progress and reduce the unproductive duplication of prior research.

Much like the patent laws promote the disclosure of technical information, the copyright laws provide an incentive for investment in the creation and distribution of expressive works such as literature and artwork.\textsuperscript{46} The similarity in the patent and copyright regimes is unsurprising since Congressional authority for both is derived from the same clause of the Constitution.\textsuperscript{47} Since the costs in copying many types of expressive works are typically much lower than the costs incurred in their creation,\textsuperscript{48} copyright protection permits an author to prevent copying and other acts that would erode the profits she hopes to receive from the work.\textsuperscript{49} Without this protection, the prospect of copying by competitors would deter many authors from ever creating works at all.\textsuperscript{50} The copyright laws are also designed to balance the interests of authors with "society's competing interest in the free flow of ideas, information, and commerce."\textsuperscript{51} Indeed, the sole interest of society and the primary object in conferring the copyright monopoly lies in the public benefits derived from the labors of authors.\textsuperscript{52} For this reason the extent of an author's right to exclude is not unlimited, but is instead limited by various doctrines designed to protect the public.\textsuperscript{53}

Since patent documents are original works of authorship so similar to many other copyrightable works, one might summarily conclude that patent documents enjoy all of the benefits of copyright protection. In fact, copyright for patents might seem to be simply another type of work that is afforded dual

\textsuperscript{46} See, e.g., Sony Corp. of Am. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984) (the grant of copyright privileges are "intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired."); United States v. Paramount Pictures, Inc., 334 U.S. 131, 158 (1948) ("reward to the author or artist serves to induce release to the public of the products of his creative genius."). Netanel argues that copyright is also necessary in order to ensure that works are created privately rather than under government influence. Neil Weinstock Netanel, Copyright and a Democratic Civil Society, 106 YALE L. J. 283 (1996).

\textsuperscript{47} U.S. CONST. art. I, § 8, cl. 8 ("The Congress shall have Power . . . [t]o promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . . ").

\textsuperscript{48} Lydia Pallas Loren, Redefining the Market Failure Approach to Fair Use in an Era of Copyright Permission Systems, 5 J. INTELL. PROP. L. 1, 22–23 (1997).


\textsuperscript{50} Id.

\textsuperscript{51} Sony Corp. of Am., 464 U.S. at 429.

\textsuperscript{52} Fox Film Corp. v. Doyal, 286 U.S. 123, 127 (1932).

\textsuperscript{53} See infra Section IV.B.
copyright and patent protection. However, patent documents place the policies of the patent and copyright systems in clear opposition. Patent documents are the medium that effectuates the patent system's goal of information disclosure. The teachings of patent documents are intended to be freely disseminated to the public, while copyright in patent documents tends to hinder that dissemination. More specifically, copyright protection for patent documents confers the ability to impede various AI uses of patent documents, which in turn could stifle the dissemination of technical information by those AI systems. This policy conflict raises several interesting issues involving permitted uses of patent documents.

In general, an owner of a copyrighted document has the right to prevent the reproduction, distribution and display of that document. However, as discussed below in Part IV, a patent document subject to copyright protection would not be encumbered by the full gamut of these rights. On the contrary, the patent applicant has at the very least implicitly consented to various uses of the patent document by voluntarily filing a patent document, knowing that the PTO would publish it for use by the public. Therefore, copyright does not inhibit the reproduction of the patent document in its entirety. However, the many potential uses of patent documents by AI involve another exclusive right. The copyright owner has the exclusive right to prepare, and authorize others to prepare, derivative works based on her copyrighted works. Such derivative works would generally include any derived text, such as an abridgment or other transformation of the patent document. Since many productive AI applications would create derivative works of patent documents, copyright could potentially hinder these AI applications.

To guide the analysis in the remainder of this article, I employ the two example AI uses described in Part I above: automatically generating a summary of a patent document and automatically creating an "improvement patent application" by altering an existing patent document. A patent's summary is a derivative work to the extent it includes portions extracted from the original patent document. Likewise, an improvement patent application is a derivative work in that it is created by adding paragraphs to most or all of the original patent document.

54 Mazer v. Stein, 347 U.S. 201, 217 (1954) (stating that "patentability . . . does not bar copyright" and that "[n]either the Copyright Statute nor any other says that because a thing is patentable it may not be copyrighted"). For example, computer software is amenable to both copyright and patent protection. See generally Mohammad Amin Naser, Computer Software: Copyrights v. Patents, 8 L.O.Y. L. & TECH. ANN. 37 (2008). However, this comparison is not quite apt since here copyright would protect the description of the invention while patent would protect the use and making of the invention.

55 17 U.S.C.A. § 106(1), (3), (5) (West 2021); see infra Section IV.C.

56 See infra Section V.A.


58 Id. § 101.
Part IV next explores the relevant copyright law doctrines to establish that AI’s use of patent documents creates a prima facie case of copyright infringement. Part V then analyzes how other doctrines serve to curtail the extent of copyright protection for these AI uses.

IV. COPYRIGHT FUNDAMENTALS

A. Copyright Eligibility Criteria

In order to receive copyright protection, a work must be an “original work of authorship” and fixed in a “tangible medium of expression.” The originality requirement merely requires that the work is independently created rather than copied and that it possesses a minimal degree of creativity. Neither uniqueness nor novelty are required. Fixation requires that the work be “fixed in any tangible medium of expression, now known or later developed, from which [the work] can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.”

A common example of copyrightable subject matter is a literary work, defined as a work that is “expressed in words . . . regardless of the nature of the material objects, such as books, periodicals, manuscripts . . . in which they are embodied.” One category of literary work for which copyrightability has been assessed is legal documents, such as legal complaints, prepared by attorneys on behalf of clients. One of the leading treatises on copyright concludes that there are “no valid grounds why legal forms such as contracts, insurance policies, pleadings and other legal documents should not be protected under the law of copyright.” The literature agrees with this assessment, although copyright may be ignored by potential infringers. Some commentators have also indicated the

59 Id. § 102(a).
63 Id. § 102(a)(1).
64 Id. § 101.
66 Id.
67 See, e.g., Stanley F. Birch, Jr., Copyright Protection for Attorney Work Product: Practical and Ethical Considerations, 10 J. INTELL. PROP. L. 255, 256 (2003) (describing how one law firm copied “hundreds of pages of land restrictions and covenants” from another); Thomas G. Field, Jr., From Custom to Law in Copyright, 49 IDEA 125 (2008) (describing situations in which norms of lawyers copying practice-related documents have been misperceived as trumping copyright law).
few, possibly rare, situations in which copying legal documents would not give rise to liability for infringement.68

The typical patent document comfortably satisfies both the originality and fixation requirements. A patent application is most often drafted by a patent attorney who distills her understanding of the inventors' novel creation into a bespoke legal document suitable for filing with the PTO.69 The patent application is fixed in electronic form on the author's computer hard drive and/or on paper. In fact, if such a document were not filed with the PTO, but instead were merely created and printed from the author's computer, there is little doubt that it would be eligible for copyright protection.

B. Limitations of Copyright

Even if copyright protects a work, there are nevertheless limits on the extent of that protection. There are three doctrines in copyright which are especially important in limiting the rights of the copyright owner: the idea-expression dichotomy, the merger doctrine, and the doctrine of fair use. Under the idea-expression dichotomy, copyright protects expression but not any of the ideas, processes, concepts, principles or discoveries underlying that expression.70 Such facts themselves cannot be protected by copyright.71 Therefore, the copyright in a document cannot prevent the public from extracting and utilizing only the information contained in the document. This doctrine is designed to prevent copyright from impeding the sharing of ideas.72 A related limitation on copyright is the merger doctrine. When there are only a limited number of ways to express an unprotectable idea, these expressions are considered merged and as unprotectable as the idea itself.73

Both the idea-expression dichotomy and the merger doctrine are particularly relevant because patent documents are rife with unprotectable

70 17 U.S.C.A. § 102(b) (West 2021); see also, e.g., Baker v. Selden, 101 U.S. 99, 104–05 (1879); Nichols v. Universal Pictures Corp., 45 F.2d 119, 121 (2d Cir. 1930).
72 Note that this aspect of copyright law is similar to the disclosure function of the patent system, which is designed to disseminate ideas.
“facts,” namely the underlying technical details of the inventions that the patent documents describe. Technical information is not subject to copyright protection. The reader of a patent document is typically interested in only these facts, not in any expressive component in the patent’s text. Moreover, if there are only a limited number of ways to describe, e.g., a component of a mechanical device, then the merger doctrine would block copyright protection for any such description. There might be a narrow set of ways to describe certain technical subject matter if a patent’s intended audience, composed of people having ordinary skill in the pertinent field, expect it to be described a particular way using standard terminology and phrasing. For example, if people in the relevant technical field would understand and employ an industry standard term such as “power supply,” then the same audience might consider a comparable but non-standard term such as “electrical load feeder” to be ambiguous or to have a meaning different from the one intended by the drafter. Although alternative ways of describing the technology might be grammatically correct and not inaccurate, if they depart too much from the audience’s expectations, they risk being misinterpreted by that audience. Readers might assume that a nonstandard description must differ in meaning from the standard description—otherwise why else would the author have failed to use the standard terminology? Thus, terminology chosen to avoid the reach of the merger doctrine and maintain copyright protection could jeopardize the patent rights that are typically the sole reason for filing a patent application.

A final limiting doctrine is the fair use defense under which certain types of uses that would otherwise be infringing are permitted. The fair use doctrine requires courts “to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster.” Section V.B below provides an analysis of how AI uses of patent documents would most likely constitute fair use.

C. Copyright Infringement

A copyright grants its owner certain exclusive rights, three of which are especially relevant to AI uses of patent documents: reproduction, distribution,

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74 See, e.g., Seng-Tiong Ho v. Taflowe, 648 F.3d 489, 498 (7th Cir. 2011) (research material embodying newly discovered scientific principles were unprotectable ideas under the merger doctrine); Gates Rubber Co. v. Bando Chem. Indus., 9 F.3d 823, 842–43 (10th Cir. 1993) (specific values of constants used in software represent scientific observations of physical relationships, so such discoveries are not protectable by copyright).


and creation of derivative works.\textsuperscript{77} The exclusive right to reproduce a work extends not only to complete copies, but also to certain partial copies.\textsuperscript{78} This right exists independently of whether that copy is sold.\textsuperscript{79} The reproduction right would clearly be implicated at the moment that an AI tool used text from a copyrighted patent document to, e.g., create a summary or an improvement patent application. In contrast, liability for distribution of a copyrighted work requires that the infringer actually disseminate copies, regardless of whether the infringer also made those copies.\textsuperscript{80} For example, if an AI system created a summary or an improvement patent application from a copyrighted patent document, anyone who provides those to another (e.g., to clients or other interested readers via email or postal mail) distributes the copyrighted work.

A derivative work is defined as "a work based upon one or more preexisting works, such as a translation . . . abridgment, condensation or any other form in which a work may be recast, transformed, or adapted."\textsuperscript{81} A derivative work would be created when an AI tool generates a summary or an improvement patent application that copies some or all of the text from a copyrighted patent document. A derivative work can even be an original work of authorship,\textsuperscript{82} such as when significant new drafting is invested in describing an improvement patent application.

In summary, the example AI uses described above—creation of summaries and improvement patent documents—would give rise to a prima facie case of infringement of the copyright in the original patent documents. We now turn to an analysis of other doctrines that limit copyright protection for these AI uses.

V. LEGAL AND PRACTICAL LIMITS ON COPYRIGHT FOR PATENT DOCUMENTS

This Part explores various limitations on copyrighted patent documents. To the best of my knowledge this is the first such analysis for U.S. patent

\textsuperscript{77}\textsuperscript{77} 17 U.S.C.A. § 106(1)-(3).
\textsuperscript{78} See generally MAI Systems Co. v. Peak Comput., Inc., 991 F.2d 511 (9th Cir. 1993).
\textsuperscript{80} See, e.g., In re Napster, Inc., 377 F. Supp. 2d 796, 802–04 (N.D. Cal. 2005); 2 NIMMER supra note 65, at § 8.11[A].
\textsuperscript{81} Id. In general, copyright protection may be obtained for a derivative work but does not extend to any part of the work in which such material has been used unlawfully. Id. § 103(a). Therefore, the creator of an unauthorized derivative work would not own a copyright in that work. See generally Kelly Casey Mullally, Blocking Copyrights Revisited, 37 COLUM. J.L. & ARTS 57 (2013) (describing the lack of clarity on whether the copyright in the unauthorized derivative work would be owned by no one or by the owner of copyright in the original work). This Article also does not address the very interesting issue of ownership of copyright in works created by AI.
documents. I begin with the simple proposition that copyright cannot prohibit the reproduction of the entire patent document by any member of the public. Next, the fair use analysis shows that the various AI uses of patent documents would likely be permitted, and an implied license may exist for certain AI uses of patent document. This Part concludes with several doctrines that create strong disincentives to assert a copyright in a patent document.

A. The Entire Patent Can Be Freely Reproduced and Distributed

The clearest limitation on copyright protection for patent documents is that the patent document as a whole may be freely copied and distributed regardless of any copyright. This certainly makes intuitive sense, since the purpose of the patent system is to publish patents for the public. To more rigorously define the source of this limitation on copyrighted patent documents, below I analyze two significant doctrines. Most prominently, the author of the patent document has granted the PTO and the public an implied license to copy and reproduce the patent. Also, since a patent imposes obligations on the public like a statute would, the patent must be open to public, just as statutes and similar legislative documents must be freely accessible.

1. Implied License to Copy the Patent

Although exclusive licenses under a copyright must be in writing, nonexclusive licenses need not be. A nonexclusive license may, therefore, be granted orally and may even be implied from conduct. Anyone authorized by the copyright owner to use the copyrighted work is “not an infringer of the

83 For an analysis of copyright protection for patents under Australian law, see McENIERY, supra note 17. Another article references U.S. patent documents in a brief footnote, stating: “The patent document itself is presumably a ‘work of the United States Government’ under 15 [sic 17] U.S.C. § 105 (1988) and hence not subject to copyright protection. However, nothing precludes the publication of the patent application (in whole or in part) in an article, or book or otherwise.” A. Samuel Oddi, An Uneasier Case for Copyright Than for Patent Protection of Computer Programs, 72 NEB. L. REV. 351, 435 n.338 (1993). Notwithstanding this assertion, infra Section V.E. shows that a patent document is not a work of the U.S. Government as a general matter.

84 See supra note 44 and accompanying text.

85 An exclusive license is one type of transfer of copyright ownership. 17 U.S.C.A. § 101. Any transfer of copyright ownership must be in writing and signed by the copyright owner or their agent. Id. § 204(a).

86 Id. § 101 (A “transfer of copyright ownership” does not include nonexclusive licenses); see, e.g., Jacob Maxwell, Inc. v. Veeck, 110 F.3d 749, 752 (11th Cir. 1997); I.A.E., Inc. v. Shaver, 74 F.3d 768, 775 (7th Cir. 1996); MacLean Assocs. v. Wm. M. Mercer-Meldinger-Hansen, Inc., 952 F.2d 769, 778 (3d Cir. 1991); Effects Assocs. v. Cohen, 908 F.2d 555, 558 (9th Cir. 1990), cert. denied sub nom. Danforth v. Cohen, 498 U.S. 1103 (1991).

87 See, e.g., Effects Assocs., 908 F.2d at 558; 3 NIMMER, supra note 65, at § 10.03[A][7].
COPYRIGHTS PROTECTION FOR PATENTS

Copyright with respect to such use." 88 Most circuit courts recognize the creation of an implied license when "(1) a person (the licensee) requests the creation of a work, (2) the creator (the licensor) makes that particular work and delivers it to the licensee who requested it, and (3) the licensor intends that the licensee-requestor copy and distribute his work." 89 Although these three criteria may be sufficient, they are not required for the creation of an implied license to a copyrighted work. Instead, the intent of the copyright owner to grant a license is dispositive. 90

Several statutes and regulations give clear notice to all potential patent applicants that any patent can be reproduced by the PTO and the public. The owner of the copyright in the patent document is aware of these uses of the patent document. Therefore, by creating a patent document to be filed as a patent application, the copyright owner impliedly agrees to the reproduction of her patent document. I briefly analyze the three-step implied license test, even though it is not dispositive, in order to determine whether it might be satisfied when a patent document is filed with the PTO. The first step 91 is perhaps the least clearly satisfied. Although the PTO might not affirmatively request a specific application from a particular applicant, a primary responsibility of the PTO certainly is to accept patent applications from any member of the public. The PTO clearly specifies what is required in a patent application 92 and accepts any patent application filed in accordance with these requirements. It is reasonable to infer that any patent application filed with the PTO is created for the PTO rather than for another purpose; this seems to be the policy on which the first step is predicated.

The second and third requirements of the test are clearly satisfied. The copyright owner makes that patent application and delivers it to the PTO, and the copyright owner intends that the PTO will copy and distribute the patent once it

90 See, e.g., Est. of Hevia v. Portrio Corp., 602 F.3d 34, 41 (1st Cir. 2010) ("We ask whether 'the totality of the parties' conduct indicates an intent to grant such permission."); John G. Danielson, Inc. v. Winchester-Conant Props., Inc., 322 F.3d 26, 40 (1st Cir. 2003) ("The touchstone for finding an implied license . . . is intent."); Nelson-Salabes, Inc. v. Morningside Dev., L.L.C., 284 F.3d 505, 515 (4th Cir. 2002) (intent is "the determinative question"); Johnson v. Jones, 149 F.3d 494, 502 (6th Cir. 1998).
91 It is not clear from the case law that the creation of an implied license under this test requires some affirmative request from the licensee to create a specific work. It is true that many implied license cases have involved a commercial entity requesting the creation of a work, e.g., from a contractor who later asserts no intention of transferring the copyright. However, I could not locate any reported cases holding that a license failed to be created because only the last two steps were satisfied.
92 For example, the PTO has promulgated regulations regarding procedural requirements for patent applications. 37 C.F.R. §§ 1.51–.58 (2021).
is granted. The applicant clearly has at least constructive notice and very likely
has actual knowledge that the patent document will be published and reproduced
by the PTO and the public. Not only are there unambiguous statutory and
regulatory provisions mandating publication, every patent has been printed
upon issuance since the first U.S. patent in 1790. 

Aside from the three-step test for showing the existence of an implied
copyright license, it is almost certain that the copyright owner has understood
and acquiesced in the required publication of the patent application by the PTO.
The patent statute clearly requires that all patent applications be published and
enumerates limited exceptions to this requirement. As described below, none
of the enumerated exceptions involve anything pertaining to copyrights, possible
copyright infringement, or anything else within the control of the copyright
owner. In light of the statutory mandate, the PTO has no discretion to withhold
publication of a patent or application in any other circumstances. The patent
statute requires that “each application for a patent shall be published . . . promptly
after the expiration of a period of 18 months from the earliest filing date.” The
statute also provides that an application shall not be published if it is

(i) no longer pending;
(ii) subject to a secrecy order under section 181;
(iii) a provisional application filed under section 111(b); or
(iv) an application for a design patent filed under chapter 16.

Another exception provides for non-publication if the invention “has not
and will not be the subject of an application filed in another country.” Finally,
the only other situation in which an application will not be published is "if the publication or disclosure of such invention would be detrimental to the national security."\textsuperscript{100} This provision addresses the same concern as the "secrecy order" in the list above, but it applies when the PTO becomes aware of a potential national security concern that other government agencies or departments have missed.\textsuperscript{101}

Since the statute emphatically commands that each application be published, and since the statute provides only six exceptions to this mandate, the statute must be interpreted as providing no additional exceptions.\textsuperscript{102} Accordingly, the PTO has no authority to withhold publication of a patent because it is copyrighted or contains copyrighted material. With knowledge of the publication requirement, the creator of a patent application must consent to the PTO's publication of the application notwithstanding any copyright in that document.

Finally, the PTO regulations provide notice that any member of the public can freely reproduce any U.S. patent, so the filing of a patent application expresses an acquiescence to reproduction of the patent document by anyone. PTO regulations contemplate copyrights in patent documents by permitting a copyright notice, such as "© 2021 John Doe," to be placed in the application adjacent to copyrighted material.\textsuperscript{103} If the applicant desires to include a copyright notice, then the applicant must also include an "authorization" stating that the copyright owner "has no objection to the facsimile reproduction by anyone of the patent document or the patent disclosure, as it appears in the Patent and Trademark Office patent file or records."\textsuperscript{104} This regulation serves an important function relating to copyright protection for patent documents. The regulation extracts from the applicant the agreement to permit "the facsimile reproduction by anyone of the patent document or the patent disclosure."\textsuperscript{105} That is, when an applicant includes this statement in the patent application, the applicant is granting an explicit license according to the plain terms of the statement. Similarly, when an applicant fails to include the required copyright notice in her patent application, it is reasonable to assume that she has evinced an intent to refrain from exercising any copyright she may have in the document.

\textsuperscript{100} Id. § 122(d).
\textsuperscript{101} Secrecy orders are issued on the initiative of an entity such as the Defense Department or the Atomic Energy Commission. Id. § 181. In contrast, a similar determination is made by the PTO under the authorization of § 122(d).
\textsuperscript{102} Under the rule of \textit{expressio unius est exclusio alterius}, the expression of one subject, object, or idea in a statute is the exclusion of other subjects, objects, or ideas. Clifton Williams, \textit{Expressio Unius Est Exclusio Alterius}, 15 \textit{MARQ. L. REV.} 191 (1931); see Nat'l R.R. Passenger Corp. v. Nat'l Ass'n of R.R. Passengers, 414 U.S. 453, 458 (1974) ("When a statute limits a thing to be done in a particular mode, it includes the negative of any other mode." (quoting \textit{Botany Mills v. United States}, 278 U.S. 282, 289 (1929))).
\textsuperscript{103} 37 C.F.R. § 1.71(d) (2021).
\textsuperscript{104} Id. § 1.71(e).
\textsuperscript{105} Id.
However, since a notice is not required to obtain copyright protection in a work,\textsuperscript{106} the mere lack of a notice per se need not imply the grant of any license. Another important caveat to the above analysis of the PTO’s copyright notice regulation is that the PTO does not have substantive rulemaking authority,\textsuperscript{107} unlike most other federal agencies.\textsuperscript{108} That is, the PTO cannot promulgate any regulations that affect any rights or obligations.\textsuperscript{109} The broadest of the PTO’s rulemaking powers authorizes the promulgation of regulations directed only to “the conduct of proceedings in the PTO.”\textsuperscript{110} Therefore, the PTO’s regulations relating to copyright notices in patent documents are merely procedural. These regulations permit the applicant to include the notice provided the notice is in the form dictated by the regulations. The regulations cannot alter any copyright or other substantive rights of the patent applicant or of any person. Failure to include the copyright authorization specified by the PTO cannot allow the PTO to deny any copyright protection to the applicant. Similarly, the mere inclusion of the required notice in a patent application cannot in any way grant an applicant additional copyright protection they would not otherwise be entitled to receive.

It is worth noting that even if a copyright could be asserted against the PTO for publication of the patent document, this nevertheless could not prevent publication. At best she would recover damages for unauthorized publication of her work. The doctrine of sovereign immunity severely limits lawsuits against the Federal Government,\textsuperscript{111} including its agencies such as the PTO. The Federal

\begin{footnotes}
\begin{enumerate}
\item Inclusion of a copyright notice and other formalities are not required for works created after March 1, 1989. See Christopher Sprigman, Reform(alizing) Copyright Law, 57 STAN. L. REV. 485, 488–91 (2004).
\item See, e.g., Koninklijke Philips Elecs. N.V. v. Cardiac Sci. Operating Co., 590 F.3d 1326, 1336 (Fed. Cir. 2010); Tafas v. Doll, 559 F.3d 1345, 1352 (Fed. Cir. 2009), reh'g granted en banc, 328 F. App’x 658 (Fed. Cir.), dismissed, 586 F.3d 1369 (Fed. Cir.); Cooper Techs. Co. v. Dudas, 536 F.3d 1330, 1336 (Fed. Cir. 2008); Merck & Co. v. Kessler, 80 F.3d 1543, 1549–50 (Fed. Cir. 1996).
\item Stuart Minor Benjamin & Arti K. Rai, Who’s Afraid of the APA? What the Patent System Can Learn from Administrative Law, 95 GEO. L.J. 269, 297 (2007) (“First, unlike most significant agencies, the PTO does not have any significant substantive rulemaking authority.”); see also Sarah Tran, Patent Powers, 25 HARV. J.L. & TECH. 609, 614 (2012) (noting that many other agencies, such as the FTC, FDA, and FCC, are instead vested with the authority to issue any regulations that are “necessary or appropriate” to administer their respective organic acts). But see Melissa F. Wasserman, The Changing Guard of Patent Law: Chevron Deference for the PTO, 54 WM. & MARY L. REV. 1959 (2013) (arguing that the PTO has received some substantive rulemaking authority under the recent America Invents Act).
\item “A rule is ‘substantive’ when it ‘effects a change in existing law or policy’ which ‘affects individual rights and obligations.’” Animal Legal Def. Fund v. Quigg, 932 F.2d 920, 927 (1991) (quoting Cubanski v. Heckler, 781 F.2d 1421, 1426 (9th Cir. 1986), vacated as moot sub nom. Bowen v. Kizer, 485 U.S. 386 (1988)).
\item Merck & Co., 80 F.3d at 1549–50 (quoting Animal Legal Def. Fund, 932 F.2d at 930).
\end{enumerate}
\end{footnotes}
Government has specifically waived its immunity from copyright infringement lawsuits.\textsuperscript{112} This waiver applies to federal agencies such as the PTO.\textsuperscript{113} Remedies in such a copyright suit are limited to "recovery of . . . reasonable and entire compensation as damages for such infringement, including the minimum statutory damages," and cannot include an injunction, attorneys’ fees, or statutory damages in excess of the minimum.\textsuperscript{114}

2. Patents, Like Statutes, Are Not Protected by Copyright

Notwithstanding the implied license to reproduce a patent document in its entirety, the public policy of access to binding law mandates that patents be free from copyright restrictions.

It has long been the case that judicial opinions and laws cannot be protected by copyright.\textsuperscript{115} The 1976 Copyright Act codified this doctrine by explicitly denying protection to federal statutes and regulations,\textsuperscript{116} but the reasoning of the earlier case law is seen as applicable to state statutes and regulations as well.\textsuperscript{117} Annotations in a state’s code are also ineligible for copyright protection.\textsuperscript{118} Similarly, laws which incorporate otherwise copyrightable third party material can be exempt from copyright protection. In\textsuperscript{119} Veeck v. Southern Building Code Congress International, Inc., the Fifth Circuit held that the adoption by a municipality of a privately-created model code

\begin{footnotes}
\item[112] 28 U.S.C.A. § 1498(b) (West 2021).
\item[113] See Boyle v. United States, 200 F.3d 1369, 1373 (Fed. Cir. 2000) ("The plain language of the statute states that the United States has waived sovereign immunity in three instances: (1) when the United States itself infringes a copyright, (2) when a corporation owned or controlled by the United States infringes, and (3) when a contractor, subcontractor, or any person, firm, or corporation, acting for the Government and with its authorization or consent, infringes.").
\item[114] 28 U.S.C.A. § 1498(b) (The "exclusive action which may be brought" is for recovery of his reasonable and entire compensation as damages for such infringement, including the minimum statutory damages set forth in 17 U.S.C. § 504(c)); id. § 2412(a) (costs do not include the fees and expenses of attorneys).
\item[115] Georgia v. Public.Resource.org, Inc., 140 S. Ct. 1498, 1507 (2020) ("The animating principle behind the government edicts doctrine is that no one can own the law."); Banks v. Manchester, 128 U.S. 244 (1888); Wheaton v. Peters, 33 U.S. (8 Pet.) 591, 668 (1834) (finding that "no reporter has or can have any copyright in the written opinions delivered by this Court," "[s]tatutes were never copyrighted," and "it is the bounden duty of government to promulgate its statutes in print").
\item[116] 17 U.S.C.A. § 105 ("Copyright protection under this title is not available for any work of the United States Government.").
\item[117] See generally L. Ray Patterson & Craig Joyce, Monopolizing the Law: The Scope of Copyright Protection for Law Reports and Statutory Compilations, 36 UCLA L. REV. 719, 751–58 (1989); 1 Nimmer supra note 65, at § 5.06[C] at 5–92 ("state statutes, no less than federal statutes, are regarded as being in the public domain").
\item[118] Public.Resource.org, Inc., 140 S. Ct. at 1507.
\item[119] 293 F.3d 791 (5th Cir. 2002).
\end{footnotes}
renders the resulting law free from copyright protection. The Court held that "as law, the model codes enter the public domain and are not subject to the copyright holder’s exclusive prerogatives."\(^{120}\) On the other hand, mere reference in a law to a copyrighted source as a legal standard does not lead to loss of copyright protection.\(^{121}\)

In determining whether a government’s use of copyrighted material extinguishes the author’s rights, courts have found it useful to consider two factors: whether the public requires access to the work, and whether the authors had sufficient incentives to create the work.\(^{122}\) When viewed through this lens, it is clear that patents are very similar to statutes and should be free of copyright protection for analogous reasons. Like statutes, patents must be accessible by the public because patents impose obligations on every member of the public: to avoid infringing any claim of the patent, even unintentionally.\(^{123}\) There is also a substantial penalty for violating these obligations.\(^{124}\) The patent laws create a very strong public interest in understanding the obligations that are defined by patents. For this reason, there is a substantial body of case law predicated on the assumption that interested members of the public are able to access and understand patents.\(^{125}\) In addition, the author of a patent document has sufficient

\(^{120}\) Id. at 793.

\(^{121}\) CCC Info. Servs., Inc. v. Maclean Hunter Mkt. Reps., 44 F.3d 61, 74 (2d Cir. 1994) (refusing to hold that a state’s reference to a copyrighted work as a legal standard for valuation destroys the copyright).


\(^{123}\) 35 U.S.C.A. § 271 (West 2021) imposes liability on anyone who “makes, uses, offers to sell, or sell any patented invention,” and for various other acts involving patented inventions. Direct patent infringement is a strict liability claim. See, e.g., BMC Res., Inc. v. Paymentech, L.P., 498 F.3d 1373, 1381 (Fed. Cir. 2007); In re Seagate Tech., Inc., 497 F.3d 1360, 1368 (Fed. Cir. 2007) (en banc).

\(^{124}\) The penalty for patent infringement is payment of “damages adequate to compensate for the infringement, but in no event less than a reasonable royalty.” 35 U.S.C.A. § 284. Certain conduct before the patent is granted can impose liability as well. Id. § 154(d). The cost of patent litigation is no doubt a significant burden also.

incentives to create it: the grant of patent rights or payment rendered to acquire those rights. That is, if the copyright owner is the owner of the patent, then the patent rights are clear incentive to create a patent document. If, on the other hand, the copyright owner is the author but not the owner of the patent rights, the author is most likely a patent attorney who has been paid to draft the patent application by the patent owner. In either case there is no need for the extra incentive of copyright to stimulate the creation of patent documents.

In the remaining sections of this Part, I turn away from the example of wholesale reproduction of the copyrighted patent, which is almost certainly permitted according to the analysis above. Instead, below it is assumed that the potentially infringing use of the patent document involves copying only a portion of the patent (such as when an AI system automatically creates a summary) or creating some derivative work of the patent document (such as when an AI system automatically creates an improvement patent application). I argue that other legal doctrines should permit these potentially-infringing uses notwithstanding any copyright in the patent document. I also describe a number of practical impediments that do not curtail copyright protection but instead create strong disincentives to assert a copyright in a patent document.

For simplicity, it will be assumed that the copyrighted patent application is drafted according to the following typical situation. A patent attorney consults with one or more inventors to understand their invention, and then drafts an original patent document describing that invention. The author of the patent document does not copy another work or make a derivative work of any other copyrighted material, except possibly another patent document. In addition, the author prepares the document intending it to be used only as a utility patent application. I ignore the extremely uncommon situations in which the author intends the document to have additional uses.

B. Fair Use

The strongest limitation on copyright in patent documents is the fair use defense, under which a use that would otherwise be infringing is permitted if it constitutes fair use. The fair use analysis below demonstrates that the AI uses of copyrighted patent documents, e.g., to create a summary or an improvement

535 U.S. 722 (2002); Wanlass v. GE, 148 F.3d 1334, 1343 (Fed. Cir. 1998) (Rader, J., dissenting) (referencing “the fundamental principle that the public has a duty to avoid infringement”); Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (“[C]ompetitors are entitled to review the public record, apply the established rules of claim construction, ascertain the scope of the patentee’s claimed invention and, thus, design around the claimed invention.”).

126 I further assume that none of these preceding patent documents incorporate any copyrighted work other than material included in other patent documents.

127 For example, I assume that the application does not include a poem or screenplay.

patent application, would very likely be considered a noninfringing fair use of the patent document. Note that these types of AI uses of copyrighted works are more expressive than many of the more conventional AI uses of copyrighted works, such as in training data or search functionality.\(^{129}\)

The statute outlines uses of copyrighted works that would constitute fair use, including "reproduction . . . for purposes such as criticism, comment, news reporting, teaching . . . , scholarship, or research."\(^{130}\) The fair use doctrine compels courts "to avoid rigid application of the copyright statute when, on occasion, it would stifle the very creativity which that law is designed to foster."\(^{131}\) A four-factor test is employed to determine whether the actions of the accused infringer are considered fair use.\(^{132}\) Courts weigh all four factors "in light of the purposes of copyright."\(^{133}\) The four factors are

1. the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
2. the nature of the copyrighted work;
3. the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
4. the effect of the use upon the potential market for or value of the copyrighted work.\(^{134}\)

An analysis of the fair use factors demonstrates that AI uses of patent documents would benefit the public without imposing any detrimental effect on the copyright owner. Intuitively, these AI uses constitute fair use because they do not detract from any benefits that the copyright owner might hope to receive.

The first fair use factor is the purpose and character of the use, which depends on considerations such as the degree to which the new work is transformative, the work's potential public benefit, and whether the use was commercial.\(^{135}\) With respect to the transformation inquiry, a significant consideration is whether the copy "merely supersed[es] the object of the original creation" or "instead adds something new, with a further purpose or different


\(^{133}\) *Campbell*, 510 U.S. at 578.


\(^{135}\) See id.; Sega Enters. Ltd. v. Accolade, Inc., 977 F.2d 1510, 1523 (9th Cir. 1992).
character, altering the first with new expression, meaning, or message." The more transformative the copy, the more likely it is to constitute fair use.\textsuperscript{136} If the new use “adds value to the original” such as by using the original work as raw material “in the creation of new information, new aesthetics, new insights and understandings” then this use “is the very type of activity that the fair use doctrine intends to protect for the enrichment of society.”\textsuperscript{138}

Using a portion of a copyrighted patent document in a summary or in an improvement patent application would be considered transformative. The information conveyed by both these uses is otherwise unavailable in the copyrighted patent document. This type of transformation thus is analogous to the copying considered a fair use in \textit{Authors Guild v. Google, Inc.}\textsuperscript{139} Moreover, the purpose of these AI uses is fundamentally different from the purpose of the copyrighted patent document. Notably, a patent application has a purely functional goal: to obtain patent rights and to comply with statutory requirements for obtaining those rights. The copyrighted patent application must disclose certain technical information that explicates how to make and use the invention. In determining the patentability of the application any expressive content is irrelevant—only the underlying non-copyrightable ideas, systems, and methods of operation matter. Therefore the purpose for the original patent application is wholly unaffected by subsequent copying by AI systems. No amount of such copying can “supersede” the use of the original patent application because the application stands alone in the determination of patentability—subsequent applications or uses of the information cannot affect this determination.

Finally, the copying by AI systems enriches society through the creation of new information: a description of a summary or new patent application different from the original. Even if the entirety of the original patent document is utilized in a subsequent improvement patent which adds to the original material, an exact copy of a copyrighted work nevertheless can be transformative.\textsuperscript{140} Disclosure via patent documents is intended to facilitate the study and improvement of patented subject matter by the public.\textsuperscript{141} For this very

\textsuperscript{136}\textit{Campbell}, 510 U.S. at 579 (alteration in original) (internal quotations omitted); \textit{Authors Guild v. Google, Inc.}, 804 F.3d 202, 214–16 (2d Cir. 2015), \textit{cert denied}, 136 S. Ct. 1658 (2016).

\textsuperscript{137}\textit{Campbell}, 510 U.S. at 579.

\textsuperscript{138}\textit{Castle Rock Ent., Inc. v. Carol Publ’g Grp., Inc.}, 150 F.3d 132, 142 (2d Cir. 1998).

\textsuperscript{139} 804 F.3d 202, 217 (2d Cir. 2015) (copying was transformative where it was for the purpose of making available significant information that was otherwise unavailable about copyrighted books).

\textsuperscript{140} \textit{See A.V. ex rel. Vanderhye v. iParadigms, L.L.C.}, 562 F.3d 630, 639 (4th Cir. 2009) (finding that an exact copy can have a transformative function or purpose); \textit{Perfect 10, Inc. v. Amazon.com, Inc.}, 508 F.3d 1146, 1165 (9th Cir. 2007) (holding that the use of original images in a computer search index served the new purpose of creating an electronic reference).

\textsuperscript{141} \textit{Integra Lifesciences I, Ltd. v. Merck KGaA}, 331 F.3d 860, 875 (Fed. Cir. 2003) (Newman, J., dissenting) (“Study of patented information is essential to the creation of new knowledge, thereby achieving further scientific and technologic progress.”).
reason patents frequently incorporate by reference material from previous patents.\textsuperscript{142} Reusing a patent document in a new patent application benefits the public by enhancing a goal of the patent system: facilitating the disclosure to the public of new inventions.\textsuperscript{143}

The last aspect of the first fair use factor, whether the use was commercial, does not focus on "whether the sole motive of the use is monetary gain, but whether the user stands to profit from exploitation of the copyrighted material without paying the customary price."\textsuperscript{144} It might at first appear that the copying of a portion of a patent document for use in a subsequent patent application is commercial. After all, this copying is motivated in part by a desire to lower the costs of preparing a patent application. However, in some situations the copying patent attorney may not profit at all from reusing portions of an earlier patent document if the attorney bills the client by the hour. Though copying would allow the attorney to draft the application in less time, she also would charge her client less. The time savings for the attorney would not translate to any cost savings or increased revenue for the author of the patent. Moreover, there is no "customary price" for exploiting the copyrighted material since there is no market in selling copyrights to patent documents.

Turning to the second fair use factor, the nature of the copyrighted work, "[t]he scope of fair use is greater when 'informational' as opposed to more 'creative' works are involved."\textsuperscript{145} "The law generally recognizes a greater need to disseminate factual works than works of fiction or fantasy."\textsuperscript{146} Patent documents are clearly informational and factual. Patent documents describe technical material and are meant to convey information sufficient to satisfy the enablement requirement.\textsuperscript{147} Any expressive content of a patent application almost certainly serves no purpose whatsoever, since the application must only satisfy the various requirements for acquiring and maintaining patent rights. The technical information must be accurate, complete, and unambiguous. Notwithstanding the fact that the author of a patent document may employ creativity to convey the ideas and facts in a patent document, it is primarily the ideas and facts themselves that are of value to those who read that patent document.\textsuperscript{148}

Moreover, patent documents are not even created with the intention of benefiting from the protection of the copyright law, as there is no market for

\textsuperscript{142} See infra notes 161–167 and accompanying text.
\textsuperscript{143} See supra note 44 and accompanying text.
\textsuperscript{145} Hustler Mag., Inc. v. Moral Majority, Inc., 796 F.2d 1148, 1153–54 (9th Cir. 1986).
\textsuperscript{146} Harper & Row Publishers, 471 U.S. at 563; see also Stewart v. Abend, 495 U.S. 207, 237 (1990) (stating that "fair use is more likely to be found in factual works than in fictional works").
\textsuperscript{147} See supra notes 32–34 and accompanying text.
\textsuperscript{148} Cf. Am. Geophysical Union v. Texaco Inc., 60 F.3d 913, 925 n.11 (2d Cir. 1994).
Copyrights in patent documents. Similarly, unlike many copyrighted works, copyright protection is not necessary to the dissemination of the underlying technical information in patent documents. The patent system has always been designed to disseminate the technical details of inventions, ideas, and procedures to the public. Copyright is utterly superfluous in this regard, so the nature of this type of work is such that fair use should be afforded a broad scope.

Application of the third fair use factor, the amount and substantiality of the portion used in relation to the copyrighted work as a whole, depends on the amount copied. The inquiry focuses on "whether the extent of . . . copying is consistent with or more than necessary to further the purpose and character of the use." At one extreme, automatic summarization by AI might copy one or two sentences from dozens of pages of a patent document. Such minor copying would likely weigh in favor of fair use. At the other extreme, assume the entirety of an earlier patent is copied as the basis for a new improvement patent application, and a paragraph of text describing the particular improvement is added. Copying a work in its entirety can weigh against fair use, but it is not dispositive. Accordingly this factor might weigh against fair use in the extreme example, but perhaps not if the extent of copying was "consistent with" the desirable use of describing technology efficiently.

The final factor, the effect upon the potential market for or value of the copyrighted work, "is undoubtedly the single most important element of fair use." "Fair use, when properly applied, is limited to copying by others which does not materially impair the marketability of the work which is copied." In assessing the marketability of a work, the court considers only those uses that creators of the original work would in general develop, or license others to develop.

Quite simply, there is no market for copyrighted patent documents, so there can be no uses which impair the marketability of any patent document. While a patent might have significant value because of its patent rights, the patent

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149 See supra Part III. The first U.S. patent statute explicitly codified the goal of public dissemination. Section 2 of the Patent Act of 1790 provided the "specification shall be so particular" as "to enable a workman or other person skilled in the art or manufacture . . . to make, construct, or use" the invention "to the end that the public may have the full benefit thereof; after the expiration of the patent term." Patent Act of 1790, ch. 7, sec. 2, 1 Stat. 109, 110 (emphasis added) (repealed 1793).

150 Castle Rock Ent., Inc. v. Carol Publ'g Grp., Inc., 150 F.3d 132, 144 (2d Cir. 1998).


153 Id. at 566-77.

154 Campbell v. Acuff-Rose Music, Inc., 510 U.S. 569, 592 (1994); Am. Geophysical Union v. Texaco Inc., 60 F.3d 913, 930 (2d Cir. 1994) ("Only an impact on potential licensing revenues for traditional, reasonable, or likely to be developed markets should be legally cognizable when evaluating a secondary use's effect upon the potential market . . . ." (internal quotations omitted)).
document itself and any copyright in the document have no value. There is no evidence that the creator of a patent document has ever sold the document or otherwise benefited in any way from any market for the document, aside from any underlying patent rights. This is eminently logical since patent documents are, and have always been, freely available and intended solely to disclose inventions to the public. Moreover, since patent documents are written merely to satisfy the legal requirements for obtaining patent rights, and not necessarily to be read easily or enjoyably, their contents are often extremely difficult to understand, and there is generally little faith that the technical information disclosed is entirely accurate. Consequently, at least according to many commentators, patents are infrequently used by the very audience for which they are intended: technologists seeking to learn about the state of the art. This phenomenon is additional evidence that there is no market for patent documents.

The analysis above indicates a strong likelihood that the reuse of a patent document in a subsequent patent document would constitute fair use. I conclude this section by briefly referring to a set of district court decisions that deal with

155 See supra Section V.A.

156 See, e.g., Fromer, supra note 40, at 560 ("technologists, trained in the relevant art, frequently find the legalized jargon in the patent document incomprehensible"); Mark A. Lemley, The Myth of the Sole Inventor, 110 Mich. L. Rev. 709, 746 (2012) [hereinafter The Myth of the Sole Inventor] ("many of those patents obfuscate the technology at issue, . . . deliberately or because we lack a clear language for communicating some types of inventions"); Sean B. Seymore, The Teaching Function of Patents, 85 Notre Dame L. Rev. 621, 626 (2010) (arguing that patents have "little technical value" because they are "unreadable"); Note, The Disclosure Function of the Patent System (or Lack Thereof), 118 Harv. L. Rev. 2007, 2026 (2005) [hereinafter The Disclosure Function] (Legal rules "create incentives for patent applicants to draft their disclosures opaquely.").

157 See, e.g., Alan Devlin, The Misunderstood Function of Disclosure in Patent Law, 23 Harv. J.L. & Tech. 401, 403 (2010) ("[T]he extent to which patent documents successfully teach the inner workings of cutting-edge technologies is quite limited."); Seymore, supra note 156 (arguing that patents are often not easily reproducible); Lisa Larrimore Ouellette, Do Patents Disclose Useful Information, 25 Harv. J.L. & Tech. 545, 548–49 (2012) (Only 38\% of survey respondents in the nanotechnology field believed that patents they were reading were reproducible.); The Disclosure Function, supra note 156, at 2025 ("Many patented inventions cannot be recreated or put into use based on the information in the patent itself. . .").

another type of fair use involving the patent system. These decisions highlight a
fair use analysis in light of the goals of the patent system; consequently, they are
helpful in evaluating the strength of the fair use arguments above. The litigation
arose after law firms copied scientific articles that were used in proceedings
before the PTO to demonstrate the relevant prior art. The law firms also
distributed the copies among firm lawyers via email. In two of the cases, the
defendants’ motions for summary judgment were granted because the defendants
were entitled to the fair use defense as a matter of law. The third case was
settled in 2015.

Because scientific articles are similar to patent documents, the fair use
analysis of scientific articles has many parallels with the analysis of copyright in
patent documents. Both types of documents are intensely factual rather than
expressive, and thus are entitled to a broader scope of fair use. Like the copying
of patent documents, the copying of scientific articles for patent proceedings
furthers a goal of the patent system, is not designed to yield a profit, and does
not detract from the market in the original work.

It is worth highlighting that the copyrighted journal articles at issue in
these lawsuits indisputably had a large and lucrative market of scientific readers.
Nevertheless, the courts determined that copying those articles for patent
proceedings did not affect that market. Instead, the copying was merely to
provide information required by the PTO, and more generally by the patent
system. Given that copying patent documents has no effect on the lucrative
publishers’ market, the case for fair use is even stronger in the non-existent
market for copyrighted patent documents.

C. Implied License to Derivative Works

As described above in Section V.A, when the creator of the patent
document files it as an application with the PTO, the copyright owner has
knowledge of, and has acquiesced to, PTO regulations regarding the
reproduction and distribution of the patent document as a whole. The copyright
owner thus grants an implied license to the PTO and to the public. Analogously,
another PTO regulation provides each patent applicant with notice that some or
all of her patent may be reproduced in a subsequent patent application, such as
an improvement patent application. The owner of a copyright in a patent
therefore allows this reproduction in subsequent patents.

159 John Wiley & Sons, Ltd. v. McDonnell Boehnen Hulbert & Berghoff L.L.P., No. 12 C 1446,
2013 WL 505252, (N.D. Ill. Feb. 12, 2013); Am. Inst. of Physics v. Winstead PC, No. 3:12-CV-
3799647.
PTO regulations allow any later-filed patent application to incorporate an earlier patent or patent application by referring to the earlier document.\(^{161}\) Incorporation by reference provides a method for integrating material from earlier documents into a host document, and the material is treated as part of the host document as if it were explicitly contained therein.\(^{162}\) Either a portion or the entirety of a prior work may be incorporated by reference into a later patent application.\(^{163}\) The subject matter incorporated by reference can be from any patent, patent application, or non-patent literature, and can be written by any party.\(^{164}\)

To incorporate subject matter from another patent or patent application, a subsequent patent application may simply refer to the prior document,\(^ {165}\) rather than including a copy of the referred-to material.\(^{166}\) Such a reference can simply identify the previous patent, e.g., by its unique patent number, and indicate which paragraphs of the patent are relied upon. After the reference has been included in a filed patent application, the applicant can amend her application to replace the reference with the text of the incorporated material.\(^{167}\) In other words, any patent applicant is permitted to copy some or all of an incorporated patent into her own. This regulation thus provides notice to patent applicants that their patent documents might be reproduced in third-party patent applications. These third party patent documents are published\(^ {168}\) though they contain portions of previous, copyrighted patent documents.

When an applicant creates a patent application, she has notice of this practice and acquiesces to it, in much the same manner described above in Section V.A. The knowledge of the PTO rule and subsequent filing of a patent application in light of that knowledge create an implied license between the applicant and subsequent applicants who reproduce the (copyrighted) patent in their own patent applications.

\(^{161}\) The incorporation by reference rule is codified in 37 C.F.R. § 1.57 (2021).


\(^{163}\) Harari v. Lee, 656 F.3d 1331, 1334–36 (Fed. Cir. 2011).


\(^{165}\) The reference must “clearly identify” the incorporated document. 37 C.F.R. § 1.57(b)(2).

\(^{166}\) Id. § 1.57.

\(^{167}\) Id. § 1.57(f).

\(^{168}\) See supra Section V.A.
D. Pragmatic Limits on Asserting a Copyright

This subsection describes legal doctrines that would constrain the use of a copyright in a patent document. Although these doctrines do not curtail copyright protection they nevertheless create strong disincentives to asserting a copyright in a patent document.

1. Pitfalls From the Idea-Expression Dichotomy

Copyright protection does not extend to any facts or ideas, only to the author’s expression of those ideas. The statutory codification of the idea-expression dichotomy explicitly excludes procedures, processes, systems, and methods of operation, all of which are the subject matter of patents. Any copyright in a patent certainly would not confer any monopoly rights in ideas such as the disclosed invention itself, and likewise could not prevent others from describing the invention in an original manner. Herein lies a subtle but powerful obstacle to enforcing a copyright in a patent. Since every patent is rife with unprotectable facts, methods, and systems, the defendant in a copyright infringement action would attempt to demonstrate that enforcement of the copyright would hamper the communication of the underlying ideas. This would force the plaintiff into a potentially detrimental analysis of the ideas and expression contained in her patent.

This analysis of ideas and expression can endanger the copyrighted patent in two ways. First, the unprotectable ideas would have to be identified and delineated. This is anathema to patent attorneys; characterizing the exact extent of the invention can be, and often is, used against the patentee to curtail patent rights by describing exactly what the invention does not entail. Potential infringers can use such a characterization to avoid patent infringement or to invalidate the patent. While a patent owner might begrudgingly accept a certain amount of such characterization while enforcing patent rights, she would likely be less willing to risk patent invalidation to enforce the much less valuable copyright in the patent document.

Second, drawing the line between ideas and expression will affect the interpretation of the patent, and thus could affect the patent’s scope. To show broad copyright protection for a portion of a patent, the copyright owner would need to show that the underlying idea was expressible in more than a limited number of ways. If not, then the merger doctrine would prevent copyright

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169 17 U.S.C.A § 102(b) (West 2021); see supra Section IV.B.
170 17 U.S.C.A § 102(b) (West 2021).
171 Seymore, supra note 156, at 635–36 (explaining that “the Federal Circuit has identified several linguistic pitfalls that the patentee must evade in order to avoid a narrow claim construction,” including so-called “patent profanity”).
172 See supra note 73 and accompanying text.
protection for any expression of the idea. Demonstrating a wide range of possible expressions for an idea necessitates distinguishing the idea from the ways to express that idea. Again, the patentee must take great care not to inadvertently define the idea in a way that reduces its scope since that could reduce the scope of what the patent protects. The copyright defendant, and possibly the court as well, would offer different and unfavorable perspectives on the extent of the unprotectable idea, perhaps narrowing it in a way that would reduce the scope of the patent's claims. In summary, the patent owner would be wary of sacrificing patent value in return for protecting the meager value in a copyrighted patent document.

2. Authorship, Ownership, and the Right To Sue

Another practical impediment to enforcement of a copyrighted patent lies in the ownership of the copyright. In many common situations the owner of the copyright in the patent document will not be the patent owner. The actual copyright owner will likely have little desire to enforce the copyright. Even locating the true copyright owner could be difficult for the patent owner to accomplish, making it challenging to obtain a transfer of rights sufficient for the patent owner to initiate a copyright suit.

A suit for infringement of a copyrighted work may only be brought by the owner or exclusive licensee of the copyright. At the time a work is created, the owner of the copyright is generally the author of the work. However, if a work is deemed to be "made for hire" by an employee or contractor, then the copyright owner is the employer or other person for whom the work was prepared. A work is considered to be made for hire if it either is made by an employee within the scope of her employment, or is specially ordered or commissioned from a non-employee. In the latter case, the parties must expressly agree in writing that the work is made for hire, and the work must be for use as one of nine predetermined manners provided in the statute.

Most instances of patent application drafting fall into one of two situations. In the first, the inventor and patent attorney are employed by the same entity. For example, many of the largest patentees are firms, such as IBM and

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174 Id. § 201(a).
175 Id. § 201(b).
176 Id. § 101.
177 The work must be specially ordered or commissioned for use as a contribution to a collective work, as a part of a motion picture or other audiovisual work, as a translation, as a supplementary work, as a compilation, as an instructional text, as a test, as answer material for a test, or as an atlas.

Id.
Intel, that employ dozens of patent attorneys. Patent applications drafted by these employees would be works made for hire and so the copyrights would be owned by the employer. In the second situation, the patent applicant retains the services of a patent attorney who works for a law firm. When a client hires a lawyer at a firm to draft a patent application, there will typically be no written agreement specifying that the patent application is a work made for hire for copyright purposes. Absent any written agreement, if the owner of the copyright in the patent application is to be the client rather than the attorney, then (1) the attorney must be an “employee” of the client, rather than an independent contractor, and (2) drafting the patent application must be within the scope of the attorney’s employment.

An analysis of the relevant law shows that the attorney is almost certainly not an employee, so the copyright would not be owned by the client.

To determine whether a hired party is an employee, courts employ a multifactor test in which no single factor is determinative. The leading copyright treatise notes that if the author and hiring party do not have a traditional employment relationship then there is generally “a judicial antipathy” to claims that the two are employer and employee. A brief description of these relevant factors shows that most likely neither the law firm nor a lawyer working for the firm would be considered an “employee” of the client for purposes of the work made for hire analysis.

One factor is the skill required in performing the work. Patent drafting requires a high level of skill, weighing against employee status. Another factor is the source of the instrumentalities and tools used in creating the work.

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181 Id.

182 Id. at 752.

183 1 NIMMER, supra note 65, at § 5.03[B][1][a][iii].


185 Reid, 490 U.S. at 751.
Since the attorney would probably use her own or her firm's computer, word processor software, research tools, and support staff to create the patent document, this weighs strongly against employee status. The "location of the work" is a factor that would probably not involve the client at all. Though the attorney might visit the client's premises to learn about the scope of the project and the nature of the invention to be patented, the attorney would probably create the patent application in her own office or home, also weighing against employee status.

Another factor, "the duration of the relationship between the parties," will often favor no employee status because many attorneys will draft one or a handful of applications for a client, and have no further relationship thereafter. On the other hand, some attorneys do have enduring relationships with their clients, with some even devoting most of their time to a single client. In such circumstances this factor could lean in favor of employee status.

Another factor is "whether the hiring party has the right to assign additional projects to the hired party." Although an attorney might strongly desire more work from her client, it is unlikely that a client would have a right to assign more work to a lawyer in a law firm. It is more likely that the attorney has no obligation whatsoever to accept additional work from a client. Many attorneys execute engagement letters with their clients in order to explain and circumscribe the exact scope of legal services to be provided and what will not be undertaken.

The "extent of the hired party's discretion over when and how long to work" is a factor that likely weighs against a finding of employee status. The attorney typically has unfettered freedom to decide when to work and how long to work on drafting the patent application, albeit within the constraints of any applicable deadlines. If the attorney charges by the hour, the client may exert some pressure to work as few hours as possible. However, that would merely reflect the desire of all clients to pay less for a service, not the ability of an employer to control how long an employee works. The attorney would be free to

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186 Id.
187 Id.
188 Id.
190 Reid, 490 U.S. at 751.
191 The client may set a deadline by which the patent application is to be prepared. In addition, many patent applications must be prepared and filed before certain legal deadlines, such as the statutory bar date triggered by the inventor's disclosure of the invention. 35 U.S.C.A. § 102(b)(1) (West 2021).
work as many hours as she desired provided she did not charge the client for hours in excess of some maximum.

Three other factors strongly favor the independent contractor status of the patent attorney. The "hired party’s role in hiring and paying assistants"192 is likely to be non-existent since the client typically has no involvement with the attorney’s paralegals and other support staff. Similarly, the "provision of employee benefits"193 by the client is a rarity, and the client’s "tax treatment of the hired party"194 almost certainly would not be that of an employee. For example, the client would not pay the attorney’s Social Security tax obligations, only the agreed-upon legal fees.

The final two factors depend on the particular arrangements the client has with the attorney and therefore might favor or disfavor an employee relationship. The "method of payment"195 can take various forms. For example, attorneys may be paid a fixed fee for a task, based on the number of hours spent performing the task, or a monthly retainer regardless of the tasks performed. Finally, "whether the work is part of the regular business of the hiring party"196 can weigh in favor of employee status for clients that regularly file dozens or even hundreds patent applications annually. In fact, patent activity is the sole business activity for some clients.197

In summary, when a client hires a law firm to prepare a patent application, the client will most often not be the author and owner of the copyright. One way to remedy this situation is for the firm to execute a written assignment of the copyright to transfer ownership to the client.198 Ideally the client’s ownership of the copyright should be established before the patent application is drafted. If the assignment of copyright is attempted after the application has been drafted, intervening events may complicate the ability to identify the copyright owner and negotiate the terms of the assignment. The client may have hired the law firm, but the patent document is authored by an attorney working for that firm. If the attorney is considered an employee of the firm for purposes of the work for hire doctrine, then the copyright in the attorney’s patent application would be owned by the firm upon its creation.

192 Reid, 490 U.S. at 751–52.
193 Id. at 752.
194 Id.
195 Id. at 751.
196 Id. at 752.
197 For example, a defensive patent fund is an entity whose primary purpose is to acquire patents and license those patents back to the fund’s members, “thereby defensively protecting . . . members from potential [patent] infringement actions.” Alex S. Li, Accidentally on Target: The MSTG Effects on Non-Practicing Entities’ Litigation and Settlement Strategies, 28 BERKELEY TECH. L.J. 483, 491 (2013).
198 Any transfer of copyright ownership must be in writing. 17 U.S.C.A. § 204(a) (West 2021). One type of transfer of copyright ownership is an assignment. Id. § 101.
However, if the patent document is drafted by a non-employee attorney, this could complicate the transfer of copyright if, for example, the attorney had departed the firm before the assignment of the copyright to the client. Many attorneys, such as associates, of counsel, and even some types of partners, would be considered employees.\(^{199}\) However, partners who are essentially owners of the firm and have significant actual control over the management and finances of the firm might not be considered employees. The patent documents they drafted would not be owned by the firm as works made for hire.\(^{200}\)

A further complication arises when a patent document incorporates an earlier patent which may have been drafted by the same attorney or other attorneys. For example, when an invention is improved there may be one patent for the original invention and another patent for the improvement. The improvement patent may require description of so much of the original invention that it should incorporate a substantial part of the original patent. Since the improvement patent would be a derivative work of the original patent,\(^{201}\) the permission of the original patent’s copyright owner is required to draft the improvement patent. In many cases a single patent document incorporates portions of several previous patent documents, each subject to a copyright owned by a different owner. It is not uncommon for an attorney to reuse portions of previous patent applications she has drafted for the same client, and to incorporate portions of previous applications written by other attorneys in the same firm. Even if a derivative work includes substantial original material, permission of the original copyright owner would be required to create the derivative work.\(^{202}\)

Obtaining permission from the copyright owner of the earlier patent document may not be straightforward because it may be impossible to identify the copyright owner. If an attorney from a different law firm is to draft the second application, that attorney would not necessarily have the permission of the copyright owner—e.g., the first firm. Even if the attorney who drafted the original application is retained to draft the second application as well, that attorney may have changed firms and similarly would not have permission of the owner of the original copyright—the first law firm.

\(^{199}\) The majority of the relevant factors strongly favor employee status for such attorneys. For example, the firm would provide the attorney with “the location of the work” and “the source of the instrumentalities and tools” used in creating patent applications, the “duration of the relationship” between the firm and attorney would typically be long and continuous, the firm would have “the right to assign additional projects” to the attorney, the firm would have significant “discretion over when and how long” the attorney worked, the firm would be solely responsible for “hiring and paying assistants” and “providing employee benefits” for the attorney, and for tax purposes the attorney would be treated as an employee.

\(^{200}\) Their documents might nevertheless be considered partnership property under certain circumstances, depending on the relevant state partnership laws.

\(^{201}\) See supra notes 80–81 and accompanying text.

\(^{202}\) 17 U.S.C.A. § 103(b).
In light of the challenges stemming from unclear ownership of copyrights in patent documents, enforcing such copyrights clearly entails some amount of risk. A defendant accused of infringing the copyright in a patent document would have an incentive to investigate the provenance of each portion of the document. If any portion of the plaintiff’s patent had itself been copied from an earlier patent, the defendant would attempt to turn the tables on the plaintiff by demonstrating that the plaintiff had likewise infringed the copyright of one or more earlier works. If so, then the plaintiff’s copyright would not extend to any of the earlier works and might not even be infringed by the defendant’s copying. Moreover, where the plaintiff’s use of previous patents was unauthorized, she would not even own a valid copyright in that work.

In summary, the owner of the copyright in a patent document may not be the patentee or even the law firm retained by the patentee to prepare the derivative patent application.

This can create potentially serious complications even when the patentee seeks to create derivative works of its own patents.

3. Attorney Ethical Obligations

The description immediately above demonstrates that enforcing copyrights in patents could have a deleterious effect on the provision of patent drafting services by impeding the reuse of earlier patents in a subsequent patent. Beyond these impediments, if there actually is any nontrivial copyright protection for patent documents, then attorneys would have accompanying ethical obligations which could hamper their patent drafting efforts.

As described above, a firm that employs a lawyer would often own the copyright in the patent documents created by the lawyer. If that lawyer left the firm, she might not be able to reuse portions of the patent documents she had drafted while at that firm because she would have no ownership in or license to the relevant copyright. This in turn would hamper the lawyer’s future drafting efforts, since she would need to draft new text rather than reuse the language she had used previously in the copyrighted patent document. A lawyer might even conservatively avoid reusing text that might be permissible to include simply to avoid any allegations of copyright infringement. This disadvantage increases with the number of different firms the lawyer is affiliated with during her career. This thicket of overlapping rights could put her future clients at a disadvantage, which potentially causes a conflict of interest.

203 Id.
204 See supra note 81 and accompanying text.
205 For example, the copying might be permissible due to the merger doctrine or fair use. See supra Sections IV.B and V.B.
206 The American Bar Association Model Rules of Professional Conduct and the rules of most states generally mandate that a lawyer shall not represent a client if there is a significant risk that
In addition, the copyrightability of patent documents would impose on the attorney an obligation to fully disclose those rights to the client. Since the client pays the law firm to prepare the patent document, many clients would reasonably expect to own any copyright in that patent document, rather than to relinquish it to the firm by default. If it is possible for such rights to exist in a patent document, then the law firm should have so informed the client and provided an opportunity for the client to acquire those rights via the required written instrument. If a lawyer does not inform the client immediately upon the creation of the patent document, she has a duty to do so soon thereafter. A significant delay could even impair the client’s right to commence civil litigation to enforce the copyright. In summary, if there is any copyright protection for patent documents, then hundreds of lawyers and law firms may have unknowingly impaired their clients’ rights over the years by failing to provide sufficient notice and failing to properly transfer those rights to the client.

E. U.S. Government Works Are Not Copyrightable

I have argued that the various AI uses of patent documents described in Part II should not be impeded by copyright law. In this Part, I briefly refute an attractive but incorrect argument in favor of the same conclusion. According to this argument, patents are exempt from copyright protection because they are works of the U.S. Government.

The United States and many other jurisdictions limit copyright protection for laws, court decisions, and other works of the government. This exemption can be implemented in at least two different ways. While some jurisdictions limit copyright protection for works published by the government, the United States more narrowly limits copyright for works created by the government. This distinction is important for patent documents, which are prepared by private applicants but then published by the government pursuant to the patent laws.

United States copyright law exempts from protection any works that are prepared by an officer or employee of the U.S. Government as part of that the representation of one or more clients will be materially limited by the lawyer’s responsibilities to another client, a former client, or herself. See, e.g., MODEL RULES OF PRO. CONDUCT r. 1.7(a) (AM. BAR ASS’N 2020).

207 See, e.g., id. at r. 1.4(a) ("A lawyer shall promptly inform the client of any decision or circumstance with respect to which the client’s informed consent . . . is required by these Rules").

208 Id.

209 A copyright action must be commenced within three years after the claim accrued. 17 U.S.C.A. § 507(b) (West 2021).

210 Oddi, supra note 82 ("The patent document itself is presumably a ‘work of the United States Government’ under 15 [sic 17] U.S.C. 105 (1988) and hence not subject to copyright protection.").
person's official duties.\textsuperscript{211} In contrast, many other countries exempt government documents from the ambit of copyright protection altogether, regardless of the authorship of those documents. The copyright status of patent documents in different countries is subject to a wide variety of local laws regarding copyright for official texts. The Berne Convention does not mandate the scope of protection that must be provided to government works; each member state has discretion to determine the protection to be granted to such works.\textsuperscript{212} At one extreme is Switzerland, which explicitly bars copyright protection for patent specifications and published patent applications.\textsuperscript{213} The legislation of many other countries does not specifically identify patent documents as outside the ambit of copyright, but nevertheless their comprehensive exclusions from copyright almost certainly include patents along with other government works.\textsuperscript{214} For example, in Canada there is no private copyright in any work published by the government.\textsuperscript{215} Still other countries permit copyright in government works but limit the accompanying exclusive rights. Australian law provides that copyright in a government work is not infringed by making one copy thereof.\textsuperscript{216}

The United States had a similarly broad exemption for government works before 1978. Throughout most of the twentieth century government publications were not subject to copyright at all.\textsuperscript{217} The Copyright Act of 1976 relaxed this prohibition to its current form.\textsuperscript{218} In making this change Congress intended "to make clear that the copyright protection of a private work is not

\setcounter{footnote}{211}
\footnote{17 U.S.C.A. \textsection 105 excludes works of the United States Government from copyright protection. A "work of the United States Government" is one that is prepared by government workers. \textit{Id.} \textsection 101.}
\footnote{Loi Federale sur le droit d'auteur et les droits voisins \textit{[LDA]}, Legge federale sul diritto d'autore e sui diritti di protezione affini \textit{[LDA]} Oct. 9, 1992, SR 231.1, \textsection 5(1)(d) (Switz.).}
\footnote{Note that in a jurisdiction that bars copyright protection for its patents, a patent might possibly receive stronger copyright protection in the United States than it would in that jurisdiction. Assume that a patent application is drafted in that foreign jurisdiction and filed with the patent office of that jurisdiction. If that application is not also filed as a U.S. patent application, then the author would enjoy no copyright protection in the foreign jurisdiction but might be able to obtain the full range of protections normally afforded by U.S. copyright law.}
\footnote{Copyright Act, R.S.C. 1985, c. C-42 \textsection 12 (Can.). \"[W]here any work is, or has been, prepared or published by or under the direction or control of Her Majesty or any government department, the copyright in the work shall, subject to any agreement with the author, belong to Her Majesty.\" \textit{(emphasis added)}.}
\footnote{Copyright Act 1968 (Cth), s 182A Section 226 of the \textit{Australian Patents Act 1990} (Cth) allows the public to reproduce, communicate, and translate a patent specification that is open to public inspection. \textit{Intellectual Property Laws Amendment (Raising the Bar) Act 2012} (Cth). \textit{See generally McEniery, supra note 17.}}
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\footnote{Copyright Act of 1976, Pub. L. No. 94-553, \textsection 105(a)(1), 90 Stat. 2541, 2599.}
\footnote{Copyright Act of 1976, Pub. L. No. 94-553, \textsection 105(a)(1), 90 Stat. 2541, 2599.}
affected if the work is published by the Government." The use of the term "work of the United States Government" was clearly intended to be different from a mere "publication of the United States Government." Clearly patent applications generally are not works of the United States Government since most are not "prepared by government workers." Since copyright protection arises upon fixation, the author of a patent application would acquire copyright protection upon its creation, well before the document was filed with the PTO. Nothing in the statute alters the ownership of the copyright merely because the PTO publishes the document. It is also true that no patent applicant could be considered to have transferred her copyright to the U.S. Government by the act of filing her patent application. Although the U.S. Government may receive and hold copyrights transferred to it by assignment, any such assignment must be in writing. Therefore no assignment can be implied from conduct such as the filing of a patent application.

VI. CONCLUSION AND RECOMMENDATIONS

Patents serve an important policy function of disseminating technical information to the public. AI systems could enhance this public benefit by drawing upon the information contained in patent documents to deliver powerful new services. The analysis in Part IV shows that it is likely, though not certain, that copyright protection for patent documents would not impede these new AI-enabled services. Nevertheless, the lack of clarity in this area of the law creates the threat that copyright might be asserted against any software company that develops this type of AI system. In light of these risks any reasonable software developer would be reluctant to invest significant amounts of time and money in developing a possibly-infringing AI system. Therefore, these AI services cannot flourish unless explicit limits are imposed on copyright protection for patent documents.

Explicit statutory constraints on copyright protection for patent documents would remove the chilling effect of the current state of the law. Amendments to Title 17 could simply eliminate copyright protection for patent applications, or explicitly authorize the use of copyrighted patent documents in information processing purposes such as summaries or improvement patent applications. Analogously, limitations on copyright were imposed after

220 Id.
222 Any transfer of copyright ownership must be in writing. Id. § 204(a). One type of transfer of copyright ownership is an assignment. Id. § 101.
recognizing that traditional copyright principles did not mesh perfectly with software.\textsuperscript{223}

Aside from explicit legislative changes, substantial progress could also be made through less binding initiatives by the PTO. The agency could promulgate regulations to encourage patent applicants to explicitly waive all copyright in their patent document. Much like the regulations which contemplate the use of a copyright notice in patent applications,\textsuperscript{224} a new regulation could prescribe the form of a notice to the public that no copyright is claimed in the patent document. For example, the following would optionally allow a patent application to include a standard disclaimer of copyright:

If no copyright notice is placed in a utility patent application as specified in 37 C.F.R. § 1.71(d), that application should include a notice at the beginning (preferably as the first paragraph) of the specification waiving copyright in the patent application. If such a notice is included then it shall read as follows: "The owner of the copyright in this patent document waives all claim of copyright."

Three aspects of this example regulation should be noted. First, it uses the word "should" so it does not mandate that the notice must be included.\textsuperscript{225} Also, PTO regulations can only create the structure that prompts a copyright owner to relinquish their copyright; they cannot curtail those rights unilaterally.\textsuperscript{226} Accordingly, this example regulation urges the patent applicant to create an explicit copyright license in the patent document. Although the waiver is optional, many patent applicants who do not desire copyright protection will include this notice merely to comply with the regulation. Finally, even if the patent attorney, not the patent owner, owns the copyright, the attorney would likewise acquiesce to the waiver by the act of drafting that notice in the patent application with knowledge that it would be filed with the PTO.\textsuperscript{227}

Reduced copyright protection for patent documents, whether by legislative changes or by voluntary relinquishment of copyright, would enable new AI technology to benefit consumers of technical information. Technologists, entrepreneurs, inventors of improvement inventions, and the public at large would be enriched by new and more efficient ways of accessing that technical information. With the proper legal framework in place, new AI tools would further the goals of both the patent and copyright systems: the dissemination of information for public benefit.

\textsuperscript{223} Id. Section 117 explicitly permits the copying that is required by common situations involving the operation of software. This section "was enacted to accommodate some of the unique characteristics of software programs as copyrightable works." Lateef Mtima, So Dark the CON(TU) of Man: The Quest for a Software Derivative Work Right in Section 117, 70 U. PIT. L. REV. 1, 5 (2007).

\textsuperscript{224} See supra notes 102–103 and accompanying text.

\textsuperscript{225} Cf. Steven S. Gensler, Must, Should, Shall, 43 AKRON L. REV. 1139 (2010).

\textsuperscript{226} See supra notes 106–109 and accompanying text.

\textsuperscript{227} The implied license analysis in Section V.A also applies to this situation.