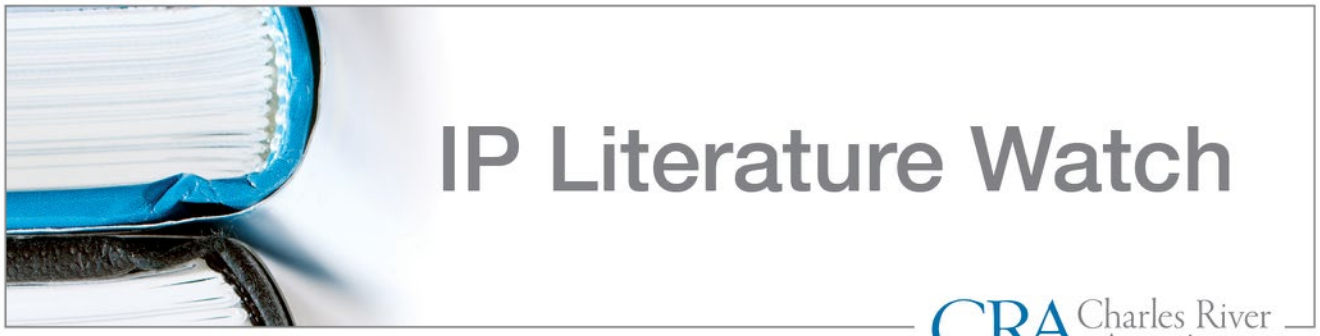

May 2022

This newsletter contains an overview of recent publications concerning intellectual property issues. The abstracts included below are as written by the author(s) and are unedited.

IP & Antitrust

Applying Antitrust to Standards Development Organizations (SDOs) – A Two-Sided Market Framework for Assessing SDO Governance

Haris Tsilikas (Max Planck Institute for Innovation and Competition)
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4072541

Standards in the ICT sector are the backbone of our innovation-driven economies and societies. Cooperative standardization takes place within standards development organizations (SDOs), that provide the governance, structure and rules of standards development, including rules on intellectual property rights that are technically essential to implement a standard. As part of standards-related public policies, antitrust has played a major role in shaping the broader regulatory environment in the U.S. and internationally. However, the competitive significance of SDO governance has not always been fully recognized by antitrust authorities prescribing to an antitrust mainstream influenced by theories of patent holdup and royalty stacking. The prevailing antitrust approaches to standards and SDOs in the U.S. and internationally tend to display a narrow focus on SDO governance as a means to mitigate patent holdup risks, thus missing the importance of SDO governance for the competitive performance of markets for standards. This can lead to enforcement errors illustrated in the case of the IEEE-SA patent policy revision process.

Drawing on insights from the economics of two-sided markets, the framework presented in this article examines SDOs as two-sided platforms bringing together the two sides of the market for standards: technology contributors and users. Under the proposed framework, SDO rules and governance reflect the continuous effort of the SDO two-sided platform to recalibrate the terms offered to the two sides of the market with the view to maximize platform output, i.e., innovative, high quality standards. However, because SDO rules are not set unilaterally as in the case of commercial two-sided platforms (e.g., digital platforms) but with input from SDO members that are occasionally competitors, collaborative decisions on SDO governance involve horizontal restraints that can lead to both procompetitive and anticompetitive outcomes.

To distinguish between procompetitive and anticompetitive SDO rules, the proposed framework includes a structured, six-step assessment. The proposed framework and the six-step assessment of prima facie restrictive SDO rules are illustrated in the case study of membership restrictions in the bylaws of the O-

RAN Alliance, an SDO that is aspiring to assume the leading role in standardization of promising Open RAN technologies in 5G radio access networks. The O-RAN Alliance case study demonstrates that SDO rules that do not necessarily relate to intellectual property and alleged risks of patent holdup can have anticompetitive potential that merits careful scrutiny. Mainstream antitrust approaches that view SDO governance through the prism of perceived patent holdup risks may miss the competitive significance of SDO restrictions such as those imposed on membership eligibility by the O-RAN Alliance. The proposed framework and the six-step assessment can assist in better focusing antitrust review on the output of the market for standards rather than on the commercial risks facing individual stakeholders.

IP & Licensing

Firms' Involvement in Standardization and Average Total Costs Per Patent Family

Yanis Luca Gamarra (TUM School of Management)
Gunther Friedl (Technische Universität München (TUM) - Faculty of Economics and Business Administration)
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4089263

Technology standards such as the Wi-Fi or 5G mobile communication standard rely on standard-essential patents (SEPs). Increasing licensing revenues and several disputes between owners and users of SEPs raise the question about the patenting behavior of firms developing standardized technologies. A better understanding of this patenting behavior can help to improve the standard-setting process and standard adoption. We propose the average total costs per patent family as an economic assessment criterion and an indicator of patenting behavior for technology standards. Using this criterion, we examine how increasing SEP family portfolios and their ownership concentration are associated with firms' patenting behavior. We find that increasing ownership concentration of SEP families is negatively associated with firms' average total costs per patent family, suggesting that decreasing competition around SEP families might decrease firms' investments per patent family. We conclude that policy makers and standard-setting organizations (SSOs) should discourage blanket declarations since increasing SEP transparency could improve comparability across standard-setting processes and reduce uncertainties in subsequent standard adoption for SEP holders and implementers. SSOs should further closely monitor how increasing (decreasing) ownership concentration of SEPs affects their standard-setting processes.

Technology Transfer and Imitation in a Cournot Oligopoly

Aineas Mallios (University of Gothenburg)
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4113487

I examine and compare patent licensing through a fixed fee and a per-unit royalty under Cournot competition. I consider licensing by an incumbent patent owner to one or two other competing firms that can obtain a patented technological improvement through a technology transfer or imitation.

Assuming that imitation is perfect, certain, instantaneous, and aims not to risk infringement, I analyze the effects of licensing on market structure, firms' individual profits, and consumers' surplus. I show that licensing through a per-unit royalty might be preferable to licensing through a fixed fee for a patent owner, while fixed-fee licensing might be at least as good as royalty licensing for consumers. Additionally, the patent owner might also use licensing to prevent imitation, but cannot use it selectively to affect competition, at least before the patent expires and when one of the competing firms can imitate.

IP & Litigation

WIPO International Patent Case Management Judicial Guide: United States

Peter S. Menell (University of California, Berkeley - School of Law)
Allison A. Schmitt (University of California, Berkeley - School of Law)
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4106648

Motivated by and drawing upon the Patent Case Management Judicial Guide developed for U.S. district courts, the World Intellectual Property Organization (WIPO) launched an International Patent Case Management Judicial Guide project in 2020. This treatise, scheduled for completion in November 2022, presents the patent case management approaches in the most significant industrial nations (Australia, Brazil, China, Germany, India, Japan, Republic of Korea, the United Kingdom, and the United States) and the European Patent Office. It aims to promote the advantages of nuanced patent case management on a global scale, enhance the capacity of litigators and in-house counsel to assess international patent litigation, and harmonize patent systems and policies.

This manuscript presents the United States chapter. In addition to presenting patent case management in U.S. district courts, it covers the Patent Trial and Appeal Board's Inter Partes Review and Post-Grant Review and the International Trade Commission's Section 337 patent investigation system. It also discusses pharmaceutical patent case management (Hatch Waxman and the BPCIA) and SEP/FRAND issues. The organization of the chapter reflects the WIPO template for characterizing patent case management regimes.

The Geopolitical Implications of Patent Holdout and the Ensuing Race to the Home Court

Jorge Padilla (Compass Lexecon)
Andrew Tuffin (Compass Lexecon)
Forthcoming, 5G and Beyond: Intellectual Property and Competition Policy in the Internet of Things (eds. Jonathan M. Barnett and Sean M. O'Connor, Cambridge University Press 2022)
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4064894

During recent decades, patent holders and implementers working within Standard Developing Organizations have successfully cooperated to develop new wireless standards that have benefited consumers all around the world. The standardization process has been successful because it has made all participants better off. The increased strategic use of jurisdiction-by-jurisdiction challenges by certain implementers to delay or avoid payment is threatening this successful process. In response, courts in various jurisdictions are moving to set global license terms. However, because some local courts are, or at least are perceived as, biased, licensors and licensees are maneuvering to influence which court ends up setting global FRAND terms, e.g., by filing barrages of anti-suit and anti-anti-suit injunctions. In this paper, we explore the implications for the future of the standardization process of these developments. Specifically, we consider the implications of extraterritoriality when licensors and licensees belong to different jurisdictions and local courts may be biased in favor of local litigants. Our main concern being that current developments may lead to the fragmentation of global standards along geopolitical lines.

The Art of Cross-Examination in PTAB Trials

Philip D. Segrest Jr. (Husch Blackwell LLP)
The Chicago-Kent Journal of Intellectual Property
https://scholarship.kentlaw.iit.edu/ckjip/vol21/iss2/1/

Despite similarities in form, a cross-examination in a Patent Trial and Appeal Board ("PTAB") trial constitutes trial testimony, which is different from a discovery deposition occurring in civil litigation. While

most practitioners would readily recognize this distinction in the abstract, it can be easy to fall back into patterns learned in and applicable to pretrial discovery in civil litigation that may not fit for a PTAB cross-examination. The PTAB regulations describe cross-examination as “routine discovery” in the “form of a deposition transcript,” but a civil action discovery deposition and a PTAB trial cross-examination deposition differ in their goals, their applicable rules, and their use in the case, all of which should inform how one approaches the cross-examination process. One of the classic texts on trial advocacy, THE ART OF CROSS-EXAMINATION, was published more than a century ago. Through stories and descriptions, that book has taught generations of lawyers its techniques for approaching cross-examination in a live courtroom setting. In this article, drawing its title from that work, we will review some of the regulations, guidelines, and cases from the Board instructing counsel on how to approach and conduct cross-examination in the PTAB trial.

IP & Innovation

Global Innovation Spillovers and Productivity: Evidence from 100 Years of World Patent Data

Enrico Berkes (Ohio State University (OSU))
Kristina Manysheva (Northwestern University)
Marti Mestieri (Northwestern University; Federal Reserve Bank of Chicago)
FRB of Chicago Working Paper No. 2022-15
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4106645

We use a panel of historical patent data covering a large range of countries over the past century to study the evolution of innovation across time and space and its effect on productivity. We document a substantial rise of international knowledge spillovers as measured by patent citations since the 1990s. This rise is mostly accounted for by an increase in citations to US and Japanese patents in fields of knowledge related to computation, information processing, and medicine. We estimate the causal effect of innovation induced by international spillovers on sectoral output per worker and total factor productivity (TFP) growth in a panel of country-sectors from 2000 to 2014, as well as on aggregate income per capita since 1960. To assess causality, we develop a shift-share instrument that leverages pre-existing citation linkages across countries and fields of knowledge, as well as heterogeneous countries' exposure to technology waves. On average, an increase of one standard deviation in log-patenting activity increases sectoral output per worker growth by 1.1 percentage points. We find results of similar magnitude for sectoral TFP growth and long-run aggregate income per capita growth.

Intellectual Property Rights and Firm-level Productivity Growth in China: New Evidence from a Nonlinear Approach

Renliang Liu (Liaoning University)
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4105491

This paper explores the way that intellectual property rights (IPRs) protection affects firm-level productivity growth through innovation and diffusion. Allowing for conditional average treatment effect, I find strong evidence for heterogeneous effects of both patenting and importing activities on firm productivity in Chinese manufacturing. The productivity effect of patenting is positively dependent on the protection of IPRs, while that of importing is first negatively and then positively affected by IPRs. I also find that overstrict protection of IPRs can reduce the productivity impact of both channels and firms in private sector are more reliant on IPRs to improve productivity through filing patents.

Do Shared Auditors Facilitate Information Transfer between Clients? Evidence from Patent Citations

Xuan Tian (Tsinghua University - PBC School of Finance)
Jiawen Yan (Cornell University - Samuel Curtis Johnson Graduate School of Management)
Luo Zuo (Cornell University - Samuel Curtis Johnson Graduate School of Management)
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4099144

This paper explores auditors' information intermediary role by examining auditor-facilitated information transfer between clients. We find that a company is more likely to cite another company's patents when they are audited by the same audit firm. This effect is stronger when the two companies are audited by the same practice office of an audit firm, exhibit intensive innovation activities, and are peers in the product market. Furthermore, the effect of shared auditors on patent citations is more pronounced for the patents that are less familiar to their clients, and the effect is mitigated for the patents that are more difficult for their clients to utilize in their own innovation. In addition, auditor-facilitated information transfer leads to more intensive innovation activities. Overall, our results present evidence that shared auditors facilitate the transfer of public information between their clients.

M&As and innovation: Evidence from acquiring private firms

Siti Farida (University of Birmingham)
Jana P. Fidrmuc (Warwick Business School - Finance Group)
Chendi Zhang (University of Exeter Business School)
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4101967

This paper shows that acquisitions of private targets increase firms' new patents, exploratory and exploitative innovation, and innovation efficiency. The results are stronger for acquirers possessing expertise from corporate venture capital and facing more competition in product markets. The effects are insensitive to targets' existing patents and acquirers' short-term pressure. We do not find any increase in innovation for public targets acquisitions. The differences in innovation outcomes also explain away the well-known higher announcement returns of acquiring private targets. Our results suggest that innovation plays a key role in the value creation of private target M&As.

IP Law & Policy

Unravelling Inventorship

Toshiko Takenaka (University of Washington - School of Law)
Chicago-Kent Journal of Intellectual Property, Forthcoming
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4070977

Inventorship—who made an invention—is one of the most important concepts under the U.S. patent system. Incorrect inventorship determinations result in patent invalidity not only because U.S. Constitution requires granting patents to true inventors, but also because first-to-invent novelty depends on inventorship whether to include prior inventions as prior art. Correcting inventorship may result in sharing patent exclusivity with competitors, which forfeits profits necessary to recover expensive development costs. However, the standard to determine inventorship has been called muddy by judges and commentators because neither the Patent Act nor case law provide any clear guidance. The standard has become overinclusive to overcome obstacles to obtaining patents when inventors work jointly on the same research project because the first-to-invent system includes prior inventions as prior art even if they were kept secret (secret prior art), unless the same inventorship exception enables inventors to remove

the prior art. To address the obstacles, Congress has introduced multiple exceptions, which have resulted in an unnecessarily complex legal framework. Under the current standard, any researchers who are willing to exchange research results and ideas are subjected to the risk of a joint inventorship dispute.

This article proposes a reform to remove the obstacles which the America Invents Act (AIA) was unable to address. It proposes the adoption of a simplified legal framework which would remove secret prior art and prior art during the grace period from obviousness determinations, regardless of inventorship. By eliminating any necessity for the overinclusive inventorship standard, this article proposes an improved inventorship standard to include only inventors who collectively made inventive contributions by revitalizing the collaboration requirement and inventive nature requirement for contributions.

CRISPR/Cas Technology and Innovation: Mapping Patent Law Issues

Daria Kim (Max Planck Institute for Innovation and Competition)
Reto Hilty (Max Planck Institute for Innovation and Competition; University of Zurich; Ludwig Maximilian University of Munich (LMU))
Elisabeth Hofmeister (Max Planck Institute for Innovation and Competition)
Peter R. Slowinski (Max Planck Institute for Innovation and Competition)
Miriam Steinhart (Max Planck Institute for Innovation and Competition)
Max Planck Institute for Innovation & Competition Research Paper No. 22-06
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4106075

The paper provides a systematic overview of issues arising at the interface between CRISPR/Cas technology and patent law. In particular, it examines aspects related to the patentability of CRISPR/Cas-based methods of genome editing, on the one hand, and access to patented technologies, in view of the expanding CRISPR patent landscape, on the other hand. On the whole, our findings show that the case of CRISPR/Cas technology is prototypical of the policy dilemma in patent law as to how to balance economic incentives of multiple innovators in a cumulative innovation setting. The reviewed technical, legal and economic factors suggest the preconditions for technology underutilization. While this paper presents the results of the exploratory phase of research, it sets a framework for the further, more targeted interdisciplinary examination of the identified issues.

Antibody Claims and the Evolution of the Written Description / Enablement Requirement

S. Sean Tu (West Virginia University College of Law)
Christopher M. Holman (University of Missouri - Kansas City School of Law)
IDEA: The IP Law Review, 2023
WVU College of Law Research Paper Forthcoming
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4088589

Biologic patents are the basis of some of the most valuable technologies in the pharmaceutical industry. Biologic patents include patents to vaccines, antibodies as well as gene therapy and isolated blood products. This study focuses on the changing nature of a key biologic product, namely antibody patents.

Antibody technology has dramatically advanced in the past few decades. Initially, antibodies were only used as research and diagnostic tools. Currently, however, antibodies have been transformed into powerful therapeutic agents used to treat a panoply of diseases. Correspondingly, the scope of antibody patents has also changed as the technology has also developed.

In the early stages of development, antibody claims were granted broad scope, being defined only by the antigens that they bound to. Currently, antibody patents have been granted very narrow scope. The Federal Circuit and the PTO have used the written description and enablement requirements to narrow the scope of antibody patents, which mirrors the dramatic changes in antibody technology. This article

outlines the changes in both Federal Circuit caselaw as well as PTO policy when it comes to antibody biologic products.

Copyright Law

Examining Copyright

Zvi S. Rosen (Southern Illinois University School of Law)
Forthcoming, Journal of the Copyright Society of the USA
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4099976

Patent and trademark examination have been the study of substantial study, and yet no comparable study has been done of copyright examination, and this piece attempts to remedy this. This piece presents a history of copyright examination, empirical data and findings on what has been rejected over the past sixty years, and a proposal based on these findings for improving the efficiency of the copyright registration system going forward. Following the Supreme Court's decision in the 4th Estate case there has been new concern about reducing examination times, and I propose a system which would make examination automatic for types of works with low rejection rates, upon the filing of an affidavit which would make clear that the work has no unusual features which would tend to lead to rejection. Other types of works, most notably works of graphic/visual arts and design, would continue to be examined as before.

Digital Single Market, First Stop to The Metaverse: Counterlife of Copyright Protection Wanted

Danny Friedmann (Peking University School of Transnational Law; Peking University School of Transnational Law)
In: LAW AND ECONOMICS OF THE DIGITAL TRANSFORMATION, Klaus Mathis and Avishalom Tor, eds. (Springer, forthcoming 2022)
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4097881

Building upon the “fair use by design” concept of Niva Elkin-Koren, this chapter is exploring how artificial intelligence can be used to implement exceptions or limitations.

Section 2 will give a brief overview of the evolution of the copyright acquis in the US and EU, in regard to platforms, discuss the implications of strict liability in an era of massive online use and infringements, which already has pushed and, a fortiori, will push platforms in the metaverse in the direction of automatic, scalable solutions, which on their turn, will increase the need for sufficient safeguards of unauthorized but legal use that falls under an exception or limitation.

Section 3 introduces the implications of the metaverse in regard to intermediary liability of copyright infringement and the need for “breathing space” for users and experimenting.

Section 4 explores the safeguards for legitimate use of content, which includes exceptions and limitations.

Building on Elkin-Koren’s “fair use by design” concept, Section 5 provides the prerequisites of designing algorithmic exceptions or limitations, and whether automated content recognition tools should be qualified as “high risk AI” under the proposed Artificial Intelligence Act, and incentives against over-blocking.

Followed by Section 6 which provides the Conclusions.

Damages Aren't so Damaging: Property and Remedies Justifications for Denying Injunctions in Song Sampling Infringement Cases

Julian Gregorio (University of Notre Dame, Law School)
Notre Dame Journal on Emerging Technologies Blog, 2022
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4080387

Today, many popular songs rely on “sampling” other artists’ songs. Beyoncé’s “Crazy in Love” samples a 1970 song; Drake’s newest album, Certified Lover Boy, samples the Beatles’ “Michelle” on the track “Champagne Poetry”; Eminem’s smash hit “My Name Is” samples a funk artist; Britney Spears’ “Toxic” samples a song from a Bollywood movie.

Sampling is the practice of “taking pre-existing sound recordings and using portions of those recordings as new elements in a new musical composition," typically using a small bit of someone else’s work and spinning it into an entirely new song. It became very popular in hip-hop circles and helped launch the careers of countless rap stars.

A standard remedy for artists whose music has been infringed via sampling is a judge-issued injunction. However, this Article questions the wisdom of that approach by examining the property justifications and remedies justifications for enjoining good-faith, albeit unauthorized, music sampling. Instead of equitable remedies like injunctions, music infringement should be housed mostly—if not exclusively—in legal damages.

IP & Trade

Effect of the duration of membership in the World Trade Organization on Trademark Applications

Sèna Kimm Gnangnon (World Trade Organization (WTO))
Working Paper
https://www.econstor.eu/handle/10419/253266

This article has examined the effect of the duration of the membership in the World Trade Organization (WTO) on the submission of trademarks by countries' residents. The analysis has used an unbalanced sample of 124 countries (including developed and developing countries), and primarily the binominal regression approach, supplemented by the generalized method of moments estimator, utilized for robustness check. Results have shown that the effect of the duration of WTO membership on trademarks works through the channel of trade costs. This effect is positive for less developed economies and negative for relatively advanced economies. These findings reflect the fact that as countries spend more time as WTO members, they experience a higher submission of patents relatively to trademarks, notably if they enjoy an improvement in their real per capita income (and export complex products). Furthermore, countries that receive higher Aid for Trade flows (which help to reduce trade costs) experience yet a higher number of trademarks applications, but to a lesser extent than patents filings.

Getting Involved in the Technology Sector: The Role of Sovereign Wealth Funds and Their Challenges to International Economic Governance

Mengjing Kong (New York University (NYU), School of Law)
University of Pennsylvania Journal of International Law, Forthcoming
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4097826

While State-owned enterprises (SOEs) have been a controversial issue of the international trading system, Sovereign Wealth Funds (SWFs) are posing new challenges to existing international economic

governance. As active players in the global investment market, SWFs will attract the scrutiny of the General Agreement on Trade in Services and international investment law. By becoming involved in the technology sector in various ways, SWFs may play a role in facilitating technology transfer, which may lead to an examination of the Trade-Related Aspects of Intellectual Property Rights Agreement. This article offers a thorough examination of the way(s) that international economic governance deals with the status of State enterprises in the investment market and their technology investment and transfer activities. It reveals a series of challenges SWFs may face when they become involved with the technology sector. To regulate SWFs, it argues that the World Trade Organization (WTO) serves as a more appropriate forum than International Center for Settlement of Investment Disputes (ICSID). Additionally, in order to properly address the State capitalism, it is important to view it more broadly and objectively, and separately from the US-China geo-economic competition.

Other Topics

Big Data Analytics to Automate Patent Disclosure of Artificial Intelligence's Inventions

Omid Valinasab
Working Paper
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4087752

As defined, a patent is an exclusive right granted to an inventor in exchange for a full disclosure of the invention. Now that AI machines are able to invent arts and science, compliance with the current patenting requirements has become very challenging when it comes to AI inventions. Moreover, while the aspects of patent filing requirements for AI are still unclear, the number of worldwide applications for AI and machine learning (ML) patents continues to grow exponentially with a compound annual growth rate of approximately 20%.

Currently, patents are conditioned on inventors describing their inventions. But how can the process be described when the inner workings and the use of AI in inventive transactions are not adequately understood or are largely unknown? Simply put, how can the AI owners provide a full explanation of the inner working of an invention that they have not personally invented or even observed? Requiring them to provide such an explanation will be discussed in this paper. Additionally, we will look at the possible solutions to satisfy the USPTO's patenting requirements with regard to an AI invention while protecting the AI process itself.

We will discuss the fact that if the AI machine can invent, it can log its steps too. After the completion of the invention process, a guided AI machine, with a supervised method of log analysis and deep learning, can filter, compile, and optimize the enormous log. Finally, this AI machine can produce all the detailed disclosure regarding the subject invention without opening the black box of the inventor. Thus, to satisfy the USPTO requirement, we can let the guided AI decide what to disclose and accordingly generate the disclosure independently. The AI machine owner will use this method to produce AI-generated disclosure to the patent office and will keep the AI machine undisclosed.

This approach will keep the inventor (the AI machine) in a black box and, at the same time, will produce the required disclosure, including a detailed description of the invention, to give social benefit to society and be in line with the public policy behind the patent law.

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