

Practical Checklists for Blockchain Technology Inventions

By Hengyi Jiang and Aseet Patel

The Artificial Intelligence (AI) and Emerging Technology Partnership of the US Patent and Trademark Office (USPTO) will present a one-hour webinar on October 18, 2022, at 4:00PM Eastern time titled, “Blockchain & IP: USC 101 Patent Eligibility in Blockchain.” The webinar intends to educate about nuances around patent eligibility given that blockchain inventions do not always produce tangible end results. The webinar plans to highlight examples that reflect patent eligibility pursuant to *Alice* within the blockchain inventive space. Without doubt, such presentations are informative, however, inventors, companies’ patent committees, and patent practitioners need more. They are tasked with efficiently assessing patent viability, drafting adequate written descriptions, and responding to 35 USC 101 rejections—they need a concise, handy, manageable checklist to assist them with these tasks. Therefore, we’ve compiled the enclosed two checklists.

The first checklist (**Blockchain Inventions – Technical Disclosure**) lists some questions to vet during an invention disclosure meeting to better extract salient details to bolster the technical underpinnings of a blockchain patent application. Simply stating “using a blockchain” is inadequate technical improvement for today’s patent application filings. Brainstorming and collecting robust details about blockchain-related inventions is valuable.

The second checklist (**Blockchain Patent Claims – *Alice* / 35 USC § 101**) lists possible bases for counter-arguments to overcome a subject matter eligibility (SME) rejection from the USPTO.

Finally, immediately following the USPTO’s AI/ET Partnership webinar, the authors of the checklists will host a 30-min. webinar for a Q&A about the blockchain checklists and to answer any questions left unaddressed in the USPTO’s webinar. **Please register for this free webinar at https://us06web.zoom.us/webinar/register/WN_hs0RB5iRTsmMvuwL_bYUWw.** The webinar is expected to start at 5PM Eastern time, October 18, at the immediate conclusion of the USPTO’s webinar.

In addition to the two checklists, some recent decisions and USPTO examples provide useful takeaways about how to claim blockchain inventions to address SME rejections:

In *Ex parte Steven Charles Davis*, Appeal No. 2019-004127 (<https://casetext.com/admin-law/mastercard-international-incorporated-42>) the PTAB agreed with the Petitioner that certain features of blockchain claims “cannot be performed by a human mind because digital signatures are of sufficient data size and complexity to not be understood by human mental work, let alone verified through the use of a public key and overly complex (by design) signature algorithms.” The PTAB agreed that the claims could not be performed by a human mind. However, the PTAB concluded that the claims were directed to an abstract idea because they were directed to a fundamental economic practice. In the next step of the USPTO’s interpretation of the *Alice* test, the PTAB held that the claims integrate the exception into a practical application by improving the security of standard payment processing systems and providing the privacy of blockchain payment

transactions. Patent practitioners can analogize their claims to those in *Ex parte* Steven Charles Davis to bolster patent eligibility of their blockchain-related inventions.

USPTO Example 41. Furthermore, patent practitioners may analogize their claims to Example 41 of the Subject Matter Eligibility Examples provided by the USPTO to argue their claims are directed to encryption techniques that secure private network communications. Example 41 determined that claims for establishing cryptographic communications using an encryption algorithm may be patentable because the mathematical concepts secure private network communications even though each of the steps was considered conventional.

Blockchain Inventions – Technical Disclosure Checklist¹

Client Matter No.: _____

Attendees: _____

Date: _____

File by Date: _____

Exemplary Aspects of Blockchain Inventions—How does your invention:

- uniquely integrate into the well-known trustless, immutable characteristics of blockchain technology?
- uniquely validate blockchain nodes in a network? And the entities that are validating?
- uniquely describe the transactions included in a distributed ledger?
- uniquely use the consensus rules for including a transaction in the ledger?
- uniquely use the types of data included in various layers of the chain or the consensus algorithm (e.g., Proof of Work)?
- uniquely distribute decentralized features across different network nodes? Does the invention operate the same on public/permissionless and private/permissioned blockchains?
- If the blockchain involves smart contracts, what novel functions are included in the smart contracts and what data is submitted to the smart contract?

Exemplary Questions Regarding Specific Improvement of Blockchain Invention

- How does your invention improve the security of the transactions, prevent fraud, or provide other benefits due to the decentralized nature of the invention?
- How does your invention increase transaction speeds, reduce the size of transactions, reduce the transaction volume, reduce the transaction frequency, improve the security of the network, improve the consensus algorithm, or segment parts of transactions into different layers to improve the speed or security?
- Does your invention provide digital signatures that are of sufficient data size and complexity to not be understood by human mental work, or verify digital signatures through the use of a public key and overly complex (by design) signature algorithms?
- How does your invention provide/improve the security of standard payment processing systems and the privacy of blockchain payment transactions?
- Does your invention specifically improve another technical field by for example:
 - “generating tamper-proof data which has been known to be altered in the past,
 - preventing against fraud by requiring cryptographic proof that a transaction came from an authorized user,
 - disintermediating third-party intermediaries which are typically involved in the process,
 - recording hashes of data on chain to get the trustless, immutable benefits of blockchain technology while maintaining the privacy of the underlying data, or
 - obtaining data that can be trusted by adverse parties”?

¹ Authors: Hengyi Jiang and Aseet Patel (adapted from the Strafford webinar of June 14, 2022, by Cameron B. Pick; Nelson M. Rosario; and Michael V. Young Sr.)

Blockchain Patent Claims – Alice / 35 USC § 101 Checklist²

- Contend that the application describes a specific way of improving prior implementations in the field of the invention?
- Contend that the claims are directed to improving blockchain technology itself by, for example:
 - “increasing transaction speeds,
 - reducing the size of transactions,
 - reducing transaction volume,
 - reducing transaction frequency,
 - improving security of the network,
 - improving the consensus algorithm,
 - segmenting parts of transactions into different layers to improve speed or security”
- Contend that the claims are directed to specifically improving another technical field by, for example:
 - “generating tamper-proof data which has been known to be altered in the past,
 - preventing against fraud by requiring cryptographic proof that a transaction came from an authorized user,
 - disintermediating third-party intermediaries which are typically involved in the process,
 - recording hashes of data on chain to get the trustless, immutable benefits of blockchain technology while maintaining the privacy of the underlying data,
 - obtaining data that can be trusted by adverse parties”
- Does the Office Action rely on just one publication to argue that blockchain features were well-understood, routine, and conventional? If so, consider counterarguing on the basis that in view of the USPTO’s *Berkheimer* Memo, the publication is inadequate to prove that the blockchain feature is widely prevalent or in common use in the relevant industry, especially for patent applications that have a priority date before 2020.

² Authors: Hengyi Jiang and Aseet Patel (adapted from the Strafford webinar of June 14, 2022, by Cameron B. Pick; Nelson M. Rosario; and Michael V. Young Sr.)