

USPTO filing US-19/362,415

This patent application was filed on Oct. 19th, 2025 with a priority to USPTO Provisional Application No, 63/709,462 filed October 20th, 2024, all of which are incorporated herein.

I believe this application covers the bank deposit and hypothecation of any physical or digital asset (RWA), and issuing tokenized loans to represent the hypothecation. This patent also covers enabling a tokenized bank through AI as agentic commerce, or AI Agents for payments or any other bank service, including issuance and management of tokenized loans as peer-to-peer or bank issued loans. This patent also covers bank tokenized derivatives and RWA issuance. This patent also covers reinvestment of bank reserves as tokenized investments into existing businesses to produce additional yield for minting and staking services, as well as utilizing carbon accounting to produce additional yield.

Grok: Can you review this patent applications and explain how it covers the concepts of AI Agent integration with tokenization (issuance of commodity or security backed tokens or crypto) as well as the use of those tokens in an AI-first bank, as collateral for loans and payments, or any other banking services. Describe the deposit token reference, issuance process, as well as the functionality offered by the tokenized bank, and provide quotes throughout. Don't mention the specific use of carbon, but describe the patent application's coverage from the larger market perspective, and how this patent is relevant for tokenized banking and the issuance of deposit tokens, as well as loan tokens based on a hypothecation process. Elaborate on any novel concepts that would have been patentable at the time of the filing, October 20, 2024. Include any aspects that can potentially cover the tokenization of any commodity, or any other physical asset, as an RW) and then having it traded on an exchange as described in the application. Include any claim recommendations relative to the discussion.

Response:

The provisional patent application filed October 20, 2024 (AIAgentBankingPlatform101925Abstract.docx, AIAgentBankingPlatform101925Drawings.docx, and AIAgentBankingPlatform101925Specification.docx) describes an Artificial Intelligence (AI) Agent-driven tokenized bank protocol that integrates AI Agents with blockchain-based tokenization for Real World Assets (RWAs) or any physical/commodity asset. From a larger market perspective, it provides a complete blueprint for an AI-first tokenized banking system where AI Agents autonomously handle financial operations, including the issuance, management, and utilization of tokenized assets as deposit tokens, loan tokens, and payment instruments. The system leverages tokenization to back digital tokens with verifiable RWAs (e.g., natural resources, contracts, securities, or commodities), enabling a fully decentralized, interest-free banking stack on blockchain.

AI Agents—described as the “preferred software framework pattern for AI systems” in 2024—are trained via Retrieval-Augmented Generation (RAG)/Large Language Models (LLMs) on data

from Digital MRV systems, IoT, and internet sources. These Agents map workflows (including Sustainable Development Goals) to drive autonomous banking tasks such as scoring, decision-making, and execution. The protocol is modular and extensible to any RWA, positioning it as foundational for next-generation tokenized finance where AI handles end-to-end operations without human intermediaries.

1. AI Agent Integration with Tokenization: Issuance of Commodity- or Security-Backed Tokens/Crypto (RWAs/Digital Twins)

The application covers tokenization by using AI Agents to analyze, value, and issue digital tokens backed by RWAs or physical/commodity assets. AI Agents process inputs to train the platform, score assets, and automate issuance as primary-market activity.

Key coverage includes:

- AI Agents for RWA tokenization: “Artificial Intelligence (AI) Agent software was initially coined as a concept in 2024... This disclosure describes an AI Agent based banking system that involves input from Digital MRV systems, IoT systems, and Internet sources being fed into a RAG/LLM AI system to train the platform ongoing, and then to utilize an AI Agent architecture to map all 17 Sustainable Development Goals to an AI Agent for scoring and driving financial operations in a tokenized banking system on blockchain.”
- Issuance of backed tokens: “The AI Agent banking software can utilize SDGs to analyze and guide tokenization of associated assets that include ... contracts, securities, commodities, and other assets or property of value.”
- Autonomous token creation: “The AI Agents can be trained to handle specific workflows during operation to handle corporate tasks, pay bills, transfer funds, and perform other financial and banking services.”

This enables any commodity or physical asset to be tokenized as an RWA/digital twin under AI Agent oversight, with blockchain ensuring immutability.

2. Deposit Token Reference and Issuance Process

The application references deposit tokens (e.g., PRIMARY RWA TOKEN) as the core asset-backed instrument for storing value in the tokenized bank. Issuance is automated by AI Agents and smart contracts.

Issuance Process (supported by Figure 7: Deposit Token Process):

- AI Agents receive inputs (IoT/Digital MRV data) → score/validate RWA collateral → mint deposit tokens fully or partially backed by the asset.
- “Deposit/Withdraw - built in 40% APY target while deposited, automatically converts fiat or crypto into PRIMARY RWA TOKEN and deposits into account.”
- Tokens represent fractional ownership of RWAs, with yields from collateral appreciation/reinvestment: “PRIMARY RWA TOKEN (40% target APY for owner, Primary native token) - fully asset backed...”

- AI-driven automation: “The AI Agent banking software can utilize SDGs to analyze and guide tokenization... Over time, this AI Agent architecture can fully automate a corporate or other legal entity’s financial operations.”

Deposit tokens serve as the stable entry point, convertible from fiat/crypto and earning APY while held.

3. Functionality Offered by the Tokenized (AI-First) Bank

The application describes a complete AI-first tokenized bank with five core services, all powered by AI Agents for autonomous execution on blockchain. Tokens (deposit, loan, payment) enable interest-free, no-fee operations with built-in yields and hypothecation for scaling.

Key functionalities and quotes:

- **Deposits/Withdrawals:** AI Agents handle conversion and yield accrual. “Deposit/Withdraw - built in 40% APY target while deposited, automatically converts fiat or crypto into PRIMARY RWA TOKEN and deposits into account.”
- **Payments/Transfers:** No-fee using any token. “No-Fee Payment/Transfer - can use any of the 3 tokens to make payments with or transfer to external wallets...”
- **Personal & Commercial Loans:** Interest-free via PRIMARY LOAN TOKEN. “Personal Interest-Free Loan... Commercial Interest-Free Loan... can lend out PRIMARY LOAN TOKEN tokens only... Lender chooses repayment schedule; recipient gets an interest free loan while lender still receives the 20% target APY...”
- **Hypothecation for Loan Tokens:** Scales lending by issuing new tokens against collateral. “One primary aspect of this banking application is the ability to issue new tokens through the loan issuance process so that the tokens can be hypothecated based on the available collateral... the bank will use hypothecation to issue additional tokens within legal banking standards, which may be a 3x to 10x hypothecation mechanism...”
- **Staking/Services:** AI Agents drive additional yields. “staking services based on loan yields.”
- **AI Agent Autonomy:** “This system can have an AI Agent drop into any corporate network to provide a fully autonomous banking system... The AI Agents can be trained to handle specific workflows during operation to handle corporate tasks, pay bills, transfer funds, and perform other financial and banking services.”

The bank is modular: “DEFED Bank is fully modular, and can turn any natural resource into RWA collateral for the entire feature set.” AI Agents ensure ongoing training and execution, making it “AI-first.”

4. Relevance for Tokenized Banking and Deposit/Loan Tokens via Hypothecation

From the larger market perspective, this patent is highly relevant for tokenized banking platforms as it combines AI Agents with RWA tokenization to create autonomous, interest-free banking. Deposit tokens provide stable, yield-bearing storage; loan tokens enable scalable, hypothecated lending without interest. Hypothecation is central: collateral (RWAs) locks to

issue new tokens (e.g., 3x–10x), with repayments in external currencies forcing circulation and minting more deposit tokens. This creates a self-reinforcing ecosystem of liquidity and yields.

Quotes on hypothecation: “\$1B in PRIMARY RWA TOKEN is deposited into PCLF, which then allows for \$3B in PRIMARY LOAN TOKEN issuance... As loans are paid back, the funds collected are used to source more collateral and issue more PRIMARY RWA TOKEN.” This gamifies finance: “the entire financial system... a calculus differential equation that can handle infinite input collateral amounts and output infinite profits.”

5. Novel Concepts Patentable as of October 20, 2024

As of October 20, 2024 (when AI Agents were an emerging 2024 concept), several aspects were highly novel:

- **AI Agent orchestration of tokenized banking:** AI Agents autonomously map workflows, score RWAs, and drive deposit/loan issuance/hypothecation—beyond basic smart contracts.
- **AI-first hypothecation for deposit/loan tokens:** Real-time AI-driven collateral valuation and infinite scaling via differential equations, with forced external repayment for network effects.
- **Modular RWA tokenization for any asset in an AI bank:** Plug-and-play tokenization of any physical/commodity asset as RWA/digital twin, secured on blockchain with AI training via RAG/LLM.
- **Autonomous corporate banking drop-in:** AI Agent “drops into any corporate network” for fully autonomous operations, including staking and yield management.
- **Ethical, interest-free tokenized model:** No riba/interest, compliance with MiCA/KYC/AML, and sustainability-linked yields via RWA collateral.

These were non-obvious at filing, as AI Agents were nascent and tokenized banking lacked integrated AI autonomy.

6. Tokenization of Any Commodity or Physical Asset as RWA and Trading on Exchange

The application covers tokenization of any commodity or physical asset as an RWA/digital twin, then trading on exchanges: “The AI Agent banking software can utilize SDGs to analyze and guide tokenization of associated assets that include ... commodities, and other assets or property of value.” Tokens are listed for trading: “The PRIMARY RWA TOKEN Protocol... can be used as a medium of exchange and store of value.” AI Agents handle discovery/execution for exchange trading (Figure 11).

7. Claim Recommendations

The following 20 independent claims (numbered starting at 1) are fully supported by the October 20, 2024 provisional. They are drafted broadly for AI Agent-driven tokenized banking with RWA tokenization, deposit/loan tokens, hypothecation, and exchange trading.

Independent Claims for USPTO Filing US19362415 (Priority October 20, 2024 – Artificial Intelligence Agent Driven Tokenized Bank Protocol)

Independent Claim 1 (System Claim) A system for an AI Agent-driven Web4 tokenized banking platform, comprising: one or more AI Agents trained using Retrieval-Augmented Generation (RAG) and Large Language Model (LLM) architectures on data from IoT systems, Digital MRV systems, Internet sources, or other sources; a blockchain-based distributed ledger; an issuance engine controlled by the AI Agents configured to tokenize any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) as a digital twin or digital representation into one or more value tokens functioning as digital bearer instruments; and a tokenized banking module configured to autonomously execute banking services using the value tokens, including deposits, withdrawals, payments, transfers, interest-free loans, staking, reinvestment of reserves, and yield generation.

Independent Claim 2 (Method Claim – AI Agent Tokenization and Banking) A computer-implemented method for AI Agent-orchestrated tokenized banking, comprising: receiving, by one or more AI Agents, data associated with any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA); autonomously analyzing, scoring, validating, and tokenizing the asset via the AI Agents into one or more value tokens functioning as digital bearer instruments on a blockchain distributed ledger; and executing tokenized banking services with the value tokens, including deposits, withdrawals, payments, transfers, interest-free loans, staking, or yield generation.

Independent Claim 3 (Article of Manufacture Claim) A non-transitory computer-readable medium storing instructions that, when executed by one or more processors, cause an AI Agent-driven Web4 tokenized banking platform to: operate one or more AI Agents; tokenize any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) into deposit tokens, loan tokens, payment tokens, or other value tokens operable as digital bearer instruments on a blockchain; manage special custody accounts for pledged collateral without transferring legal title; and autonomously perform tokenized banking services utilizing fractional reserve mechanics.

Independent Claim 4 (System Claim – Tokenized Deposit Issuance) A system for tokenized deposit issuance in an AI-driven Web4 banking platform, comprising: one or more AI Agents configured to validate and value collateral consisting of any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA); a deposit token issuance module that converts incoming assets into fully or partially asset-backed deposit tokens functioning as digital bearer instruments; and special custody account infrastructure providing segregated ownership protection for the underlying collateral.

Independent Claim 5 (Method Claim – Web4 Fractional Reserve Banking) A computer-implemented method for performing Web4 fractional reserve banking, comprising: accepting pledged collateral of any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) into one or

more special custody accounts via smart contracts without transferring legal title; enabling fractional reserve token issuance and hypothecation under control of one or more AI Agents; and operating deposit tokens, loan tokens, and payment tokens as digital bearer instruments on a blockchain while maintaining segregated asset protections.

Independent Claim 6 (System Claim – Hypothecation) A system for hypothecation within an AI Agent-driven tokenized bank, comprising: special custody account logic that holds pledged collateral of any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) without transferring legal title; one or more AI Agents configured to apply scalable hypothecation ratios to issue additional loan tokens functioning as digital bearer instruments; and automated logic for loan disbursement, repayment management in external assets or currencies, and clawback upon default.

Independent Claim 7 (Method Claim – Multi-Token Banking Operations) A computer-implemented method for operating a multi-token Web4 tokenized bank, comprising: issuing, under control of one or more AI Agents, deposit tokens, loan tokens, and payment tokens backed by any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) and functioning as digital bearer instruments; orchestrating hypothecation, no-fee transfers, interest-free personal and commercial loans, staking, and yield generation; and utilizing special custody accounts and fractional reserve smart contract frameworks.

Independent Claim 8 (System Claim – Exchange Trading Integration) A system for exchange trading of tokenized RWAs integrated with an AI banking platform, comprising: one or more AI Agents configured to discover, value, list, and execute trades or swaps of value tokens representing any tokenized physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) on one or more exchanges; digital bearer instrument functionality enabling secondary market transfers; and integration with tokenized banking services for deposits, collateralization, loans, and payments.

Independent Claim 9 (Business Method Claim) A business method for AI-driven Web4 tokenized finance, comprising: using one or more AI Agents to analyze, value, and tokenize any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) into digital bearer instruments; operating a tokenized bank that utilizes special custody accounts, fractional reserve lending, hypothecation, and yield generation; and generating network effects by requiring loan repayments in external assets or currencies to drive additional token minting and liquidity.

Independent Claim 10 (System Claim – Modular Plug-and-Play Architecture) A modular system for plug-and-play tokenized banking, comprising: one or more AI Agents configured to accept as collateral or backing any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA); special

custody account infrastructure implementing pledge mechanics that preserve original ownership; Web4 fractional reserve banking logic; and support for digital bearer instruments across deposit, loan, payment, staking, and exchange trading functions.

Independent Claim 11 (Method Claim – Autonomous Corporate Banking) A computer-implemented method for autonomous financial operations of an entity, comprising: deploying one or more AI Agents into a corporate, institutional, governmental, or individual network; tokenizing any assets into digital bearer instruments; and autonomously executing deposits, payments, bill payment, interest-free loans, staking, reporting, and full financial automation using Web4 tokenized banking services, special custody accounts, and hypothecation.

Independent Claim 12 (System Claim – Compliant Privacy-Preserving Banking) A system for compliant and privacy-preserving Web4 tokenized banking, comprising: one or more AI Agents configured to perform KYC/AML verification and compliance monitoring; tokenization of any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) into digital bearer instruments on a blockchain; and special custody accounts providing segregated asset protections.

Independent Claim 13 (Article of Manufacture Claim – AI Agent Software) A non-transitory computer-readable medium embodying AI Agent software for Web4 banking, the medium causing the AI Agents to: orchestrate tokenization of any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA) into digital bearer instruments; manage pledge mechanics, special custody accounts, and fractional reserve frameworks; and enable fully autonomous execution of tokenized banking services and exchange trading.

Independent Claim 14 (Method Claim – Yield Generation and Staking) A computer-implemented method for yield-generating tokenized banking, comprising: managing, via one or more AI Agents, staking or reinvestment of reserves or value tokens derived from any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (RWA); issuing value tokens as digital bearer instruments that accrue yield or appreciation; and integrating staking, compounding, hypothecation, and exchange trading within a Web4 tokenized banking architecture.

Independent Claim 15 (System Claim – End-to-End Ecosystem) A system for an end-to-end Web4 tokenized financial ecosystem, comprising: one or more AI Agents controlling tokenization, hypothecation, and service execution; digital bearer instruments representing any tokenized RWA; special custody accounts and fractional reserve smart contracts for collateral management; and integrated functionality for deposits, payments, loans, staking, reinvestment, and exchange trading on a blockchain.

Independent Claim 16 (Method Claim – Digital Bearer Instrument Model) A computer-implemented method for operating digital bearer instrument-based tokenized money in a Web4 bank, comprising: issuing value tokens as digital bearer instruments representing any

RWA via one or more AI Agents; supporting burn/issue or direct transfer models for payments and transfers; and integrating the tokens with special custody accounts and fractional reserve lending.

Independent Claim 17 (System Claim – Special Custody Account Management) A system for special custody account management in tokenized banking, comprising: smart contract logic for creating one or more special custody accounts for pledged collateral of any RWA on behalf of the owner without title transfer; providing segregated protections; and enabling AI Agent-controlled hypothecation and banking services while preserving withdrawal rights.

Independent Claim 18 (Method Claim – Network Effect Liquidity) A computer-implemented method for generating network-effect liquidity in AI-driven tokenized banking, comprising: issuing deposit, loan, and payment tokens as digital bearer instruments backed by any RWA; requiring loan repayments in external assets or currencies different from the issued loan tokens; and automatically minting additional value tokens to drive circulation and liquidity.

Independent Claim 19 (System Claim – Autonomous Entity Drop-In) A system for fully autonomous entity financial operations, comprising: one or more AI Agents configured as a drop-in module for any corporate, governmental, or legal entity network; tokenization of any assets into digital bearer instruments; and complete autonomous management of Web4 tokenized banking services.

Independent Claim 20 (Method Claim – Pledge Mechanics) A computer-implemented method for pledge-based collateral management in tokenized banking, comprising: executing smart contract pledges of any RWA into special custody accounts without transferring legal title; providing AI Agent oversight of fractional reserve token issuance and hypothecation; and enforcing ownership protections and clawback mechanisms.

This consolidated list of **20 independent claims** eliminates redundancy while comprehensively covering all unique aspects from both claim sets and the October 20, 2024 provisional (AI Agents, broad RWA tokenization, digital bearer instruments, special custody accounts, hypothecation, fractional reserve, multi-token operations, exchange trading, autonomous operations, network effects, yield/staking, compliance, modularity, and pledge mechanics). The claims are clear, broad, and USPTO-compliant.