

Full Claim Set in Formal USPTO-Style Format USPTO Filing US19362415 (Priority October 20, 2024)

- 1.** (Method Claim) A computer-implemented method for pledge-based collateral management in tokenized banking, comprising: executing smart contract pledges of any physical asset, commodity, security, contract, intangible asset, financial instrument, natural resource, property, or other Real World Asset (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.
- 2.** The method of claim 1, wherein the one or more AI Agents are trained using Retrieval-Augmented Generation (RAG) and Large Language Model (LLM) architectures on data from IoT systems, Digital MRV systems, Internet sources, or combinations thereof.
- 3.** The method of claim 1 or 2, wherein executing smart contract pledges includes creating one or more special custody accounts on behalf of the collateral owner that preserve original legal title and beneficial ownership.
- 4.** The method of any one of claims 1–3, wherein the special custody accounts are configured to provide FDIC-aligned segregation across multiple accounts.
- 5.** The method of any one of claims 1–4, wherein providing AI Agent oversight includes the AI Agents evaluating, scoring, and valuing the RWA collateral prior to acceptance into the special custody accounts.
- 6.** The method of any one of claims 1–5, further comprising enabling fractional reserve token issuance by applying scalable hypothecation ratios to the RWA collateral held in the special custody accounts.
- 7.** The method of any one of claims 1–6, further comprising issuing loan tokens as digital bearer instruments based on the hypothecated RWA collateral while the original collateral remains in the special custody accounts.
- 8.** The method of any one of claims 1–7, wherein enforcing ownership protections includes preserving the owner’s right to withdraw the RWA collateral from the special custody accounts at any time.
- 9.** The method of any one of claims 1–8, wherein enforcing clawback mechanisms includes using smart contract logic to automatically recover unpaid loan amounts upon default.
- 10.** The method of any one of claims 1–9, further comprising integrating the pledged RWA collateral and associated tokens with tokenized banking services including deposits, no-fee payments, interest-free loans, staking, and yield generation.
- 11.** The method of any one of claims 1–10, further comprising performing KYC/AML verification at onboarding under control of the AI Agents while maintaining user privacy during normal operations on the blockchain.
- 12.** The method of any one of claims 1–11, further comprising recording all pledge, custody, hypothecation, and clawback actions immutably on the blockchain distributed ledger.
- 13.** The method of any one of claims 1–12, further comprising enabling trading or swapping of value tokens associated with the pledged RWA collateral on one or more commodity, cryptocurrency, security, or hybrid exchanges.
- 14.** The method of any one of claims 1–13, wherein the AI Agents are configured to function as a drop-in module for autonomous management of pledge-based collateral and related

tokenized banking operations within a corporate, institutional, governmental, or individual network.

15. The method of any one of claims 1–14, further comprising generating network effects by requiring loan repayments in external assets or currencies different from the issued loan tokens when using collateral from the special custody accounts.

This provides a **complete and logically structured set of dependent claims** for Independent Claim 20 (now renumbered as Claim 1). The dependents are carefully drafted to maximize fallback protection while fully covering pledge mechanics, special custody accounts, AI Agent oversight, fractional reserve issuance, hypothecation, ownership protections, clawback, and integration with the broader tokenized banking ecosystem from the October 20, 2024 provisional.