IN THE UNITED STATES DISTRICT COURT
FOR THE [...]

TRUE RETURN SYSTEMS LLC Plaintiff, v. MAKERDAO Defendant.	§ § § § § § § § §	Case No. X:xxx-cv-xxxxx-ABC

COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff True Return Systems LLC ("True Return"), by and through its undersigned counsel, brings this Complaint for patent infringement against Defendant MakerDAO ("MakerDAO"), and in support thereof alleges as follows, upon personal knowledge as to itself and upon information and belief as to all others:

NATURE OF ACTION

1. This action seeks legal and equitable relief against MakerDAO's unlawful infringement of True Returns' United States Patent No. 10,025,797, generally relating to technology for improving computerized ledgers, including distributed computerized ledgers such as blockchains.

PARTIES

2. True Return is limited liability company organized and existing under the laws of the state of Connecticut with its principal place of business located at 253 Turtle Back Road, New Canaan, CT 06840.

3. Upon information and belief, MakerDAO is a decentralized autonomous organization controlled and operating at the Ethereum blockchain contract address 0x9f8f72aa9304c8b593d555f12ef6589cc3a579a2 and operating from the website https://makerdao.com/en/.

4. On information and belief, MakerDAO was launched by Rune Christensen and the MakerDAO Foundation in late 2017.

5. MakerDAO was launched for the principal purposes of issuing a Dai stablecoin currency. The ownership and governance rights over MakerDAO are represented by MKR tokens created and distributed by MakerDAO. MakerDAO itself, and the MakerDAO Foundation are holders of MKR tokens. The MakerDAO Foundation has a listed address of 110 Cooper Street, Santa Cruz, CA 95060, but on information and belief, MakerDAO operates, by design, without a U.S. address or location.

6. Investment and ownership tokens in MakerDAO are freely tradable in the U.S. on the largest cryptocurrency exchanges including Coinbase, Gemini, and Kraken. Similarly, access to MakerDAO's Dai-based services are available throughout the U.S.

7. On information and belief, MakerDAO is not formally organized as a corporation, LLC, partnership or other recognized organization type which would serve to limit the liability of its MKR token owners.

JURISDICTION AND VENUE

8. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1 et seq.

9. This Court has exclusive subject matter jurisdiction under 28 U.S.C. §§ 1331 and 1338(a). This Court has personal jurisdiction over Defendant because it has engaged in systematic and continuous business activities in this District. As described below, Defendant has committed acts of patent infringement giving rise to this action within this District.

10. Venue is proper in this District under 28 U.S.C. § 1400(b), because Defendant has committed acts of patent infringement in this District. In addition, Plaintiff has suffered harm in this District.

<u>TRUE RETURN AND THE ’797 PATENT</u>

11. True Return was founded by Jack Fonss.

12. Mr. Fonss is a technology consultant focusing on financial technology (FinTech) platforms and offerings. After college, Mr. Fonss was a computer programmer and systems analyst at both McKinsey & Company and Morgan Stanley & Co on a range of platforms, operating systems, and computer languages. He has consulted for numerous asset managers and technology companies on a wide variety of FinTech issues related to funds, trading systems, and digital currencies.

13. Mr. Fonss founded and managed AccuShares Investment Management, LLC (“AccuShares”), a FinTech startup offering innovative technological solutions to problems limiting exchange traded funds. While running AccuShares, Mr. Fonss was the principal inventor of a range of systems and software technologies which have been adopted by many crypto-currency, digital money, and exchange middleware environments.

14. By 2015, Mr. Fonss recognized that distributed computerized ledger technology (including blockchain technology) provided the potential to improve computer system environments and their interaction with real-world assets and electronically published data sources. In particular, Mr. Fonss' work included the design and integration of separate linked ledgers and architectures for computer system efficiency, security and persistent auditability.

15. Mr. Fonss worked through the issues and invented distributed computerized ledger technologies that could, among other applications, efficiently integrate on-chain and off-chain data and processes for improved computer system efficiency and security. He filed a provisional patent application for his invention with the U.S. Patent and Trademark Office on February 23, 2018 and a non-provisional patent application on March 16, 2018.

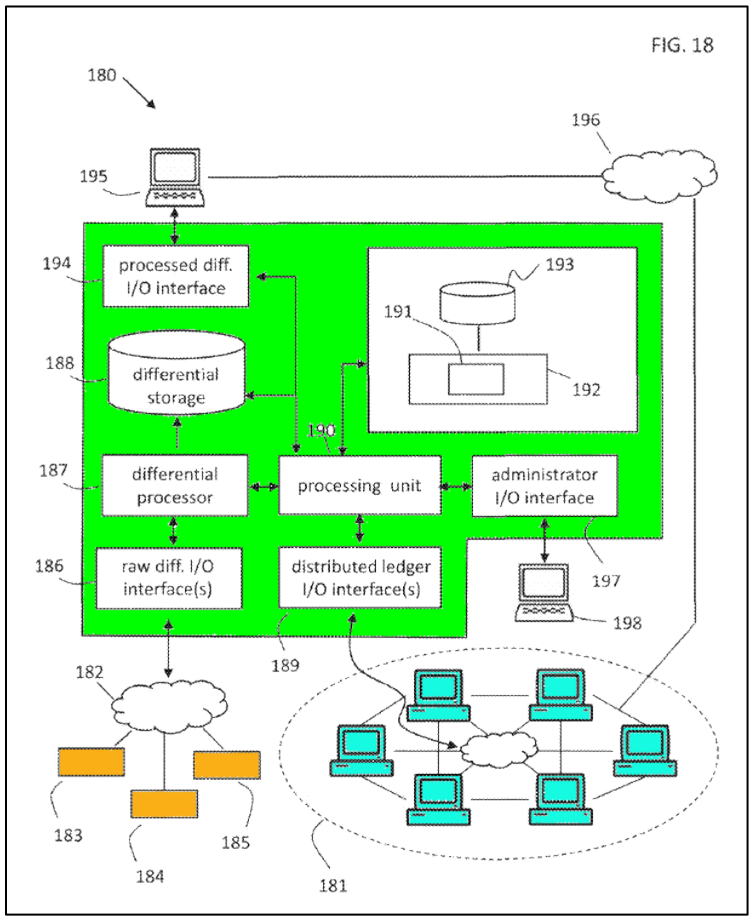
16. On July 17, 2018 the U.S. Patent and Trademark Office duly and legally issued U.S. Patent No. 10,025,797 (the "797 Patent"), naming Jack Fonss as the inventor. The '797 Patent is entitled "Method and System for Separating Storage and Process of a Computerized Ledger For Improved Function." A true and correct copy of the '797 Patent is attached hereto as **Exhibit A**.

17. The '797 Patent is generally directed to systems and methods that improve distributed-ledger technology by addressing computational, time, storage, and security constraints inherent to distributed ledgers (such as blockchains). Included in the general approach of the '797 Patent is the separation of certain processing

and storage functions from a base distributed computerized ledger (such as a blockchain).

18. The systems and methods of the ’797 Patent can be generally understood with reference to the exemplary embodiment depicted in Figure 18 of the ’797 Patent, which is reproduced in annotated form below.

19. An exemplary differentials processing/storage system (in green) includes a differentials computer node (item 191) and a differential storage unit (item 188) linked to one or more electronically published time-sequenced data streams or descriptive differentials (items 183, 184, 185, in orange). The system processes (187) data from the data stream / descriptive differentials (183, 184, 185) and stores the processed data on the differential storage unit (188). For example, the system may process logistical data provided by a shipping network, financial data and market prices provided by an exchange, or information provided by a news outlet.



20. The differentials processing/storage system (in green) is also linked to a base distributed computer ledger ("DCL," 181, in cyan) that includes one or more transaction records. The system processes (187, 190, 191) differential data (188) to link the differential data (188) to the DCL, which can then, e.g., update a transaction record of the DCL (181) according to the differential data (188).

21. This system improves over the prior-art distributed computerized ledgers in a number of ways including moving certain functionality and storage off the DCL while simultaneously allowing the DCL to utilize exogenous data to update transaction records on the DCL. This is possible because the differentials processing/storage system links the DCL to the exogenous data while keeping and implementing certain computing-intense processes and storage-intense data so that the DCL is not burdened with such. This provides several technological advantages. For instance, certain processing and storage constraints inherent to a DCL are overcome by shifting processing and storage to a differentials processing/storage system. Similarly, security issues related to exposing DCL processes to the public are ameliorated by shifting processes to the differentials processing/storage node. Through a layered or parallel architecture, system access, processing, and storage can be performed more efficiently, and distributed ledgers such as blockchains can realize increase functionality.

MAKERDAO

22. MakerDAO provides methods and systems that use a processing/storage system to link published data to a distributed computerized ledger, specifically a blockchain.

23. MakerDAO establishes the MakerDAO blockchain data environment which includes the MakerDAO Multi-Collateral Dai (MCD) System, the Oracle Security Module, and related system components. The MakerDAO blockchain data environment creates and manages the MakerDAO Dai (stablecoin) and MKR ownership interests.

24. MakerDAO is a self-described "Decentralized Autonomous Organization" and MakerDAO operates autonomously, carrying out the business of creating and maintaining its stable coin currency token Dai, and running its decentralized ecosystem for the benefit and profit of the MKR token owners.

25. The MKR token is the investable unit for the ownership, operation, and governance of the MakerDAO blockchain integrated system. MakerDAO's ownership and governance, through the MKR token, enables MakerDAO owners to make proposals, vote on proposals, and profit from the activities and operations of MakerDAO and its technology. MakerDAO produces financial reports (on its website "forum.makerdao.com") which report metrics including income for MRK owners.

26. As of February 3, 2022, MakerDAO maintains approximately 997,631MKR tokens for the purposes of owning, funding, governing, and promoting MakerDAO. The current market value of MKR ownership tokens is approximately $2.25 billion as of February 3, 2022. The current market value of MakerDAO's Dai stablecoin currency is approximately $9.6 billion.

27. MakerDAO develops and promotes the MakerDAO blockchain environment to individuals and institutions in the U.S. in large part to expand the use and adoption of the MKR token and thereby increase the value of the MKR token. MakerDAO produces financials and performance reports for the benefit of its owners. So called "Real World Finance Core Unit Reports" are published on the MakerDAO forum (forum.makerdao.com). Monthly financials are reported at Finance@MakerDAO (*https://finance.makerdao.network)*

28. MakerDAO has many sources of income from its decentralized autonomous organization platform. Since the creation and build-out of the MakerDAO Multi-Collateral Dai (MCD) System (which incorporates the MakerDAO's Oracle Security Modules), MakerDAO has collected revenue, including amounts from its "Stability Fee". The Stability Fee is directly related to the data storage technology incorporated in the MakerDAO Oracles Security Modules.

29. On information and belief, MakerDAO (the DAO itself) owns and controls more than 20% of the MKR tokens.

MAKERDAO SYSTEM

30. MakerDAO authored and published a whitepaper titled "The MakerDAO Protocol: MakerDAO's Multi-Collateral Dai (MCD) System" ("MakerDAO Whitepaper"). A true and correct copy of this publication is attached hereto as Exhibit B.

31. In the MakerDAO Whitepaper, MakerDAO states: "MakerDAO is an open-source project on the Ethereum blockchain and a Decentralized Autonomous Organization…".

32. In the MakerDAO Whitepaper, MakerDAO states: "Dai is a decentralized, unbiased, collateral-backed cryptocurrency soft-pegged to the US Dollar."

33. In the MakerDAO Whitepaper, MakerDAO states: "Maker Governance is the community organized and operated process of managing the various aspects of the Maker Protocol. Dai is a decentralized, unbiased, collateral-backed cryptocurrency soft-pegged to the US Dollar."

34. In the MakerDAO Whitepaper, MakerDAO states: "To protect the system from an attacker attempting to gain control of a majority of the Oracles, the Maker Protocol receives price inputs through the Oracle Security Module (OSM), not from the Oracles directly. The OSM, which is a layer of defense between the Oracles and the Protocol, delays a price for one hour, allowing Emergency Oracles or a Maker Governance vote to freeze an Oracle if it is compromised."

35. In the MakerDAO Whitepaper, MakerDAO states: "A large Vault becomes undercollateralized due to market conditions. An Auction Keeper then detects the undercollateralized Vault opportunity and initiates liquidation of the Vault, which kicks off a Collateral Auction for, say, 50 ETH."

36. In the MakerDAO Whitepaper, MakerDAO states: "The Maker Protocol requires real-time information about the market price of the collateral assets in Maker Vaults in order to know when to trigger Liquidations."

37. MakerDAO authored and published a website page titled "Security - How the Maker Protocol handles the security of oracles" (Security Website Page). A true and correct copy of this publication is attached hereto as Exhibit C.

38. On the Security Website Page, MakerDAO states: "Oracle Security Modules (OSMs) delay the publishing of new reference prices for a predefined set of time. This parameter is called the Oracle Security Module Delay and was set to be one hour at the launch of MCD."

39. On the Security Website Page, MakerDAO states: "The Oracle Security Module(OSM) safeguards the process by delaying price-feed data for one hour."

40. On the Security Website Page, MakerDAO states: "Oracles use the median of the reported prices for each asset as the reference price. Using a median instead of an average makes it harder to manipulate the reference price since control over half of the data providers is needed in order for a fraudulent price to be pushed through."

41. On the Security Website Page, MakerDAO states: "At the launch of Multi-Collateral Dai, oracles received data from a total of 20 Feeds which consisted of 15 individuals and five public organizations."

42. On the Security Website Page, MakerDAO states: "There are two types of Feeds; Dark Feeds run by anonymous individuals, and Light Feeds run by public organizations. Individuals consist of people internal to Maker, influential people in the greater crypto community, as well as some community members."

43. On the Security Website Page, MakerDAO states: "The oracle system for the Maker Protocol uses decentralized reporting to defend against fraudulent price data."

44. On the Security Website Page, MakerDAO states: "This allows MKR token holders and other stakeholders the time to react to bugs or attacks on the Oracles. An OSM is active on each Oracle in the Maker Protocol."

45. On the Security Website Page, MakerDAO states: "A Medianizer is a type of smart-contract in the Maker Protocol's Oracle system that collects price-data from Feeds and calculates a reference price by calculating a median."

46. MakerDAO authored and published a document titled "MakerDAO Documentation". A true and correct copy of this publication is attached hereto as Exhibit D.

47. In the MakerDAO Documentation, MakerDAO states: "The Maker Protocol is the platform through which anyone, anywhere can generate the Dai stablecoin against crypto collateral assets."

48. In the MakerDAO Documentation, MakerDAO states: "MakerDAO is a decentralized organization dedicated to bringing stability to the cryptocurrency economy."

49. In the MakerDAO Documentation, MakerDAO states: "There are multiple organizations and individuals who report price-data, they are called Feeds."

50. In the MakerDAO Documentation, MakerDAO states: "With the new version of the Maker Protocol, Multi Collateral Dai (MCD), being released and live on the main Ethereum network."

51. MakerDAO authored and published a document titled "Median – Detailed Documentation". A true and correct copy of this publication is attached hereto as Exhibit E.

52. In Median – Detailed Documentation, MakerDAO states: "Every time a new list of prices is received, the median of these is computed and used to update the stored value."

53. In Median – Detailed Documentation, MakerDAO states: "…the price (val) is intentionally kept not public because the intention is to only read it from the two functions read and peek, which are whitelisted. This means that you need to be authorized."

54. In Median – Detailed Documentation, MakerDAO states: "The bud is modified to get whitelisted authorities to read it on-chain (permissioned), whereas, everything of off-chain is public."

55. In Median – Detailed Documentation, MakerDAO states: "In the case of it being an authorized oracle, it will check if it signed the message with a timestamp that is greater than the last one. This is done for the purpose of ensuring that it is not a stale message. The next step is to check for order values, this requires that you send everything in an array that is formatted in ascending order."

56. In Median – Detailed Documentation, MakerDAO states: "ETHUSD shutdown (can still add collateral and pay back debt - increases safety) but you cannot do anything that increases risk (decreases safety - remove collateral,

generate dai, etc.) because the system would not know if you would be undercollateralized."

57. MakerDAO authored and published a document titled "Maker Protocol 101". A true and correct copy of this publication is attached hereto as Exhibit F.

58. In Maker Protocol 101, MakerDAO states: "Vat - The single source of truth for the Maker Protocol. It contains the accounting system of the core Vault, Internal Dai balances, and collateral state. The Vat has no external dependencies and maintains the central "Accounting Invariants" of the Maker Protocol. It houses the public interface for Vault management, allowing urn (Vault) owners to adjust their Vault state balances. It also contains the public interface for Vault fungibility, allowing urn (Vault) owners to transfer, split, and merge Vaults. Excluding these interfaces, the Vat is accessed through trusted smart contract modules."

59. In Maker Protocol 101, MakerDAO states: "Any time the collateral value of a Vault gets closer to its debt, it becomes "risky-er". The system liquidates Vaults that get too risky."

60. In Maker Protocol 101, MakerDAO states: "Component Spotter - The Maker Protocol requires real time information about the market price of the assets used as collateral in Vaults. Ultimately, this market price determines the amount of Dai that can be minted, as well as the grab condition for Vault liquidations. The oracle module handles how markets prices are recorded on the blockchain."

61. In Maker Protocol 101, MakerDAO states: "An oracle module is deployed for each collateral type. It feeds price data for a corresponding collateral type to the Vat."

62. In Maker Protocol 101, MakerDAO states: "Components: Dai - An extension from DS-Token and standard ERC20 token interface. Contains the database of Dai token owners, transfer, approval and supply logic."

63. In Maker Protocol 101, MakerDAO states: "The oracle module handles how markets prices are recorded on the blockchain."

64. MakerDAO authored and published a document titled "Transaction Manager". A true and correct copy of this publication is attached hereto as Exhibit G.

65. In Transaction Manager 101, MakerDAO states: "The transactionManager service is used to track a transaction's status as it propagates through the blockchain."

66. In Transaction Manager 101, MakerDAO states: "Methods in Dai.js that start transactions are asynchronous, so they return promises. These promises can be passed as arguments to the transaction manager to set up callbacks when transactions change their status to pending, mined, confirmed or error."

67. MakerDAO authored and published a document titled "Introducing Oracles V2 and DeFi Feeds". A true and correct copy of this publication is attached hereto as Exhibit H.

68. In Introducing Oracles V2 and DeFi Feeds, MakerDAO states: “The published prices are pooled together into a canonical price in a smart contract that can then be used by a decentralized application (dapp).”

69. In Introducing Oracles V2 and DeFi Feeds, MakerDAO states: “Oracles, collectively, are a mechanism to broadcast data from outside of the blockchain onto the blockchain.”

70. MakerDAO authored and published a document titled “Oracle Security Module (OSM) - Detailed Documentation”. A true and correct copy of this publication is attached hereto as Exhibit I.

71. In Oracle Security Module (OSM), MakerDAO states: “The OSM (named via acronym from "Oracle Security Module") ensures that new price values propagated from the Oracles are not taken up by the system until a specified delay has passed.”

72. In Oracle Security Module (OSM), MakerDAO states: “The central mechanism of the OSM is to periodically feed a delayed price into the MCD system for a particular collateral type. For this to work properly, an external actor must regularly call the poke() method to update the current price and read the next price.”

73. In Oracle Security Module (OSM), MakerDAO states: “Values are read from a designated DSValue contract (its address is stored in src). The purpose of this delayed updating mechanism is to ensure that there is time to detect and react to an Oracle attack (e.g. setting a collateral's price to zero). Responses to this include calling stop() or void(), or triggering Emergency Shutdown.”

74. MakerDAO authored and published a document titled “uniswap-price-feed”. A true and correct copy of this publication is attached hereto as Exhibit J.

75. In uniswap-price-feed MakerDAO states: “Prices are retrieved from chain every second. The average of last 60 prices are reported to subscribed clients.”

76. In uniswap-price-feed MakerDAO states: “The primary and only entity this service operates on is feed. Each feed is effectively a stream of timestamped records. Timestamps never go back and it is always guaranteed that new records will be added 'after' the existing ones. This simplification makes feed streams consumption much easier for clients.”

77. In uniswap-price-feed MakerDAO states: “Each record is represented throughout the service as a JSON structure with two fields: timestamp and data . The first one is a UNIX epoch timestamp represented as a number (either integer or floating-point). The latter can be basically anything.”

FIRST CLAIM FOR RELIEF
(Infringement of U.S. Patent No. 10,025,797)

78. True Return incorporates by reference its allegations in the preceding paragraphs of this Complaint.

79. The ’797 Patent is valid and enforceable.

80. The ’797 Patent is directed to patentable subject matter.

81. True Return owns all rights, title, and interest in the ’797 Patent, and holds all substantial rights pertinent to this suit, including the right to sue and recover for all past, current, and future infringement.

82. MakerDAO has and continues to directly infringe and/or indirectly infringe by inducement and/or contributory infringement, literally and/or under the doctrine of equivalents, the ’797 Patent under 35 U.S.C. § 271.

83. MakerDAO directly infringes the ’797 Patent because it has made, used, sold, and offered to sell the MakerDAO protocol, its Multi-Collateral Dai (MCD) System including the Oracle Security Module and related components, system services, the Dai stable coin, and MKR ownership interests in the United States. MakerDAO represents to the public and its owners that it performs all the operations and services relating to its Dai product and MKR ownership interests. MakerDAO describes itself as a decentralized autonomous organization.

84. The MakerDAO Multi-Collateral Dai (MCD) System including the Oracle Security Module, related systems and software satisfies all the limitations of one or more claims of the ’797 Patent, including Claim 1 and Claim 7.

85. Claim 1 of the ’797 Patent recites:

> 1. A computer based method comprising:
>
> creating at least one electronic parallel storage of a differences layer linked to a distributed computer ledger (DCL); the DCL contains an electronic transaction record by a time-sequenced value or a time-sequenced string;
>
> accessing and storing a value through the at least one electronic parallel storage of the differences layer, the value from a group comprising of at least one time-sequenced electronically published data stream and at least one descriptive differential, wherein at least one differences processing engine running on a specialized computer system creates and stores parameters from a group comprised of a measurement differences and a descriptive differences;

storing the DCL containing an electronic transactions record on at least one of a distributed network of connected independent computers or a decentralized network of computers wherein the electronic transaction record is time sequenced, and a writing or an appending of the electronic transaction records is performed on the distributed network of connected independent computers or the decentralized network of computers;

storing the at least one electronic parallel storage of the differences layer on at least one of a centralized storage device controlled by the specialized computer system or a decentralized storage device controlled by the specialized computer system for increasing functionality and utility of the DCL, reducing data storage requirements, eliminating transmission of redundant data, and improving data security;

linking the electronic transaction record in the DCL to records of the at least one electronic parallel storage of the differences layer utilizing at least one time sequenced value, string, code, or key; and

imputing at least one measured differential with a descriptive identifier or at least one descriptive identifier to the electronic transaction record of the DCL through data storage and processing on the at least one electronic parallel storage of the differences layer.

86. Operation of the MakerDAO Multi-Collateral Dai (MCD) System implements a computer based method.

87. For instance, the MakerDAO Multi-Collateral Dai (MCD) System is a computer-based open-source project on the Ethereum blockchain and a decentralized autonomous organization (or smart contract directed DAO).

88. Operation of the MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "creating at least one electronic parallel storage of a differences layer linked to a distributed computer ledger (DCL); the DCL contains an

electronic transaction record by a time-sequenced value or a time-sequenced string."

89. For instance, the Oracle Security Module stores data such as market prices and is linked to a DCL such as the Ethereum mainnet blockchain. The Ethereum blockchain (to which the MakerDAO Multi-Collateral Dai (MCD) System is linked) contains time-sequenced electronic transaction records. The Oracle Security Module operates with off-chain storage of published market prices, where an oracle module is deployed for each collateral type and it feeds price data for a corresponding collateral type to the Vat and Vault storage. The Oracle Security Module system uses time delays, median values, and sequenced queuing based on timestamps as values to link the MakerDAO storage with the DCL storage. Stored items include such things as market prices, price changes, medians, descriptors, and timestamps as values.

90. Operation of the MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "accessing and storing a value through the at least one electronic parallel storage of the differences layer, the value from a group comprising of at least one time-sequenced electronically published data stream and at least one descriptive differential, wherein at least one differences processing engine running on a specialized computer system creates and stores parameters from a group comprised of a measurement differences and a descriptive differences."

91. For instance, the MakerDAO Multi-Collateral Dai (MCD) System connects and accesses feeds from multiple organizations and individuals who report price

data; the published prices are pooled together into a canonical price in a smart contract that can then be used by a decentralized application (dapp). The MakerDAO Multi-Collateral Dai (MCD) System accesses, stores, and time-sequences market prices, related collateral currency descriptors (an oracle module is defined for each collateral type such as descriptor "ETH") and a system time as a linking value (each feed is effectively a stream of timestamped records). Timestamps never go back and it is always guaranteed that new records will be added 'after' the existing ones. The published data is accessed through the Oracle Security Module, processed by the Medianizer, and stored through the Oracle Security Module and Vat. Where the Oracle Security Module accesses and stores published data feeds from Uniswap, each record is represented as a JSON structure with fields including a timestamp and data.

92. Operation of the MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "storing the DCL containing an electronic transactions record on at least one of a distributed network of connected independent computers or a decentralized network of computers wherein the electronic transaction record is time sequenced, and a writing or an appending of the electronic transaction records is performed on the distributed network of connected independent computers or the decentralized network of computers."

93. For instance, the MakerDAO Multi-Collateral Dai (MCD) System updates (writes to) the Ethereum blockchain through both a transaction writing of market price data following an Oracle Security Module Delay (current set for one-hour after

off-chain processing, recording, and storage), and Ethereum blockchain transaction recordings through sub-components including the Component Spotter, the Vat, and the Auction Keeper where a Dai transaction is performed. MakerDAO records transactions on the Ethereum blockchain for Dai in the form of a minting transaction, a liquidation transaction, or another type of transaction in response to accessed and stored data. The MakerDAO Multi-Collateral Dai (MCD) System provides the data and the processing for writing and appending records to the Ethereum blockchain which resides on the distributed Ethereum network.

94. Operation of the MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "storing the at least one electronic parallel storage of the differences layer on at least one of a centralized storage device controlled by the specialized computer system or a decentralized storage device controlled by the specialized computer system for increasing functionality and utility of the DCL, reducing data storage requirements, eliminating transmission of redundant data, and improving data security."

95. For instance, components which include the Oracle Security Module and Vat store the published market prices off-chain prior to writing transactions on the Ethereum blockchain. MakerDAO cites functionality, redundancy, accuracy, and security among the purposes of its parallel storage. Specifically, the MakerDAO processes (and blockchain transaction recordings) are based on data and inputs from the internally stored Oracle Security Modules (values and descriptors accessed from published sources stored, processed, and sequenced by the OSM) and not data

and inputs from the oracles or data sources. The Oracle Security Module: improves functionality, in that a large number of independent prices can be aggregated, improves accuracy and eliminates redundancy through validation and eliminating stale levels, and improves accuracy relating to the collateralization levels of the MakerDAO Dai stablecoin. MakerDAO cites reduced risk of attacks and reduced risk of erroneous system inputs.

96. Operation of the MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "linking the electronic transaction record in the DCL to records of the at least one electronic parallel storage of the differences layer utilizing at least one time sequenced value, string, code, or key."

97. For instance, each feed to the Oracle Security Module is effectively a stream of timestamped records. Timestamps never go back and it is always guaranteed that new records will be added after the existing ones. Where the Oracle Security Module accesses and store published data feeds from Uniswap, each record is represented as a JSON structure with two fields including a timestamp and data. The MakerDAO Multi-Collateral Dai (MCD) System accesses and stores time sequences market prices, related collateral currency descriptors (identifying each asset, e.g. "ETH" for Ether as a descriptor) and a system time as a linking value. The published data is accessed through the Oracle Security Module, processed by the Medianizer, and stored on or through the Oracle Security Module and Vat.

98. Operation of the MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "imputing at least one measured differential with a descriptive

identifier or at least one descriptive identifier to the electronic transaction record of the DCL through data storage and processing on the at least one electronic parallel storage of the differences layer."

99. For instance, the MakerDAO Multi-Collateral Dai (MCD) System's oracle modules handle how market prices are recorded on the blockchain; an oracle module is deployed for each collateral type. Additionally, MakerDAO's Component Spotter – uses the real time information about the market price of the assets (e.g. "ETH" as a descriptor) used as collateral in vaults (stored and processed in the parallel storage) to determine the amount of Dai that can be minted on the Ethereum blockchain. The differential and identifier (for example collateral type) will result in the system recording transactions for the minting (increasing) of Dai or the liquidation (reducing) of Dai on the Ethereum blockchain.

100. Claim 7 of the '797 Patent recites:

> **7**. A system comprising:
>
> a system having a memory device, the memory device further including a Random Access Memory (RAM);
>
> a processor connected to the memory device, the processor is configured to:
>
> > create at least one electronic parallel storage of a differences layer linked to a distributed computer ledger (DCL), both the electronic parallel storage of the differences layer and the DCL containing a respective electronic transaction record, a time-sequenced value, or a time-sequenced string;
> >
> > access a value from a group comprising of at least one time-sequenced electronically published data stream and at least one descriptive differential;

store the values from a group comprising of at least one time-sequenced electronically published data stream and at least one descriptive differential on the at least one electronic parallel storage of the differences layer;

align and link a stored value record of the at least one electronic parallel storage of the differences layer to the electronic transaction record of the DCL utilizing at least one time sequenced value, string, code, or key; and

impute at least one measured differential with a descriptive identifier or at least one descriptive identifier to the electronic transaction record of the DCL.

101. The MakerDAO Multi-Collateral Dai (MCD) System is a system.

102. The MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "a system having a memory device, the memory device further including a Random Access Memory (RAM)"

103. For instance, MakerDAO is an open-source project on the Ethereum blockchain and a decentralized autonomous organization. The Oracle Security Modules access values including market prices, system timestamps, and descriptive identifiers, and every time a new list of prices is received, the median of these is computed and used to update the stored value.

104. The MakerDAO Multi-Collateral Dai (MCD) meets the limitation of "a processor connected to the memory device."

105. For instance, authorized users of MakerDAO's OSM (Oracle Security Module) are allowed to set a value after some duration of time (e.g. one hour) to protect the system from an attacker who gains control of a majority of the oracles, leaving enough time for the MKR governance community to analyze the data and react. Also, the Component Spotter, using real time information about the market

price of the assets used as collateral in Vaults, determines the amount of Dai that can be minted, as well as the grab condition for Vault liquidations.

106. The MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "the processor is configured to: create at least one electronic parallel storage of a differences layer linked to a distributed computer ledger (DCL), both the electronic parallel storage of the differences layer and the DCL containing a respective electronic transaction record, a time-sequenced value, or a time-sequenced string."

107. For instance, the Oracle Security Module (OSM) stores data such as market prices and is linked to a DCL such as the Ethereum mainnet blockchain. The Ethereum blockchain contains time-sequenced electronic transaction records. The Oracle Security Modules operate with off-chain storage of published market prices, a system determined time delay, and sequenced queuing using timestamps (as values) to link the OSM storage with the DCL storage. Stored items include published market prices, price changes, type differentials (each oracle identifies a descriptive type such as "ETH") and timestamps as values. The OSM handles how market prices are recorded on the blockchain.

108. The MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "the processor is configured to: … access a value from a group comprising of at least one time-sequenced electronically published data stream and at least one descriptive differential."

109. For instance, the MakerDAO Multi-Collateral Dai (MCD) System connects and accesses feeds from multiple organizations and individuals who report price data. The published prices are pooled together into a canonical price in a smart contract that can then be used by a decentralized application (dapp). MakerDAO accesses and stores time sequenced market prices, and related collateral currency descriptors (identifying each asset) where a separate identifying Oracle Security Module is deployed for each collateral type. Where the Oracle Security Module accesses and store published data feeds from Uniswap, each record is represented as a JSON structure with two fields including a timestamp and data.

110. The MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "the processor is configured to: … store the values from a group comprising of at least one time-sequenced electronically published data stream and at least one descriptive differential on the at least one electronic parallel storage of the differences layer."

111. For instance, the MakerDAO Multi-Collateral Dai (MCD) System connects and accesses feeds from multiple organizations and individuals who report price data. The published prices are pooled together into a canonical price in a smart contract that can then be used by a decentralized application (dapp). Each feed is effectively a stream of timestamped records. Timestamps never go back and it is always guaranteed that new records will be added 'after' the existing ones. Where the Oracle Security Module accesses and store published data feeds from Uniswap,

each record is represented as a JSON structure with two fields including a timestamp and data.

112. The MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "the processor is configured to: … align and link a stored value record of the at least one electronic parallel storage of the differences layer to the electronic transaction record of the DCL utilizing at least one time sequenced value, string, code, or key."

113. For instance, the OSM (Oracle Security Modules) are periodically feed a delayed price into the MakerDAO system for a particular collateral type (e.g. "ETH"), and for this to work properly, an external actor must regularly call the poke() method to update the current price and read the next price using system sequence, median calculations, and timestamps as values. The Component Spotter requires real time information about the market price of the assets used as collateral in Vaults, and ultimately, this market price determines the amount of Dai that can be minted on the Ethereum blockchain, as well as the grab condition for Vault liquidations. Also, the Oracle Security Modules handles how markets prices are recorded on the blockchain in a manner which is timestamped, time delayed, and sequenced.

114. The MakerDAO Multi-Collateral Dai (MCD) System meets the limitation of "the processor is configured to: … impute at least one measured differential with a descriptive identifier or at least one descriptive identifier to the electronic transaction record of the DCL."

115. For instance, Oracle Security Modules, collectively, are a mechanism to broadcast data from outside of the blockchain onto the blockchain, and an oracle module is deployed for each collateral type (e.g. "ETH" or Ether as a descriptor) and it feeds price data for a corresponding collateral type to the Vat and Vault. Any time the collateral value of a Vault gets closer to its debt, it becomes "risky-er, and this market price determines the amount of Dai that can be minted, as well as the grab condition for Vault liquidations, resulting in a MakerDAO transaction recording on the blockchain.

116. The MakerDAO Multi-Collateral Dai (MCD) System software meets the limitation of "link the transaction records in the DCL to the at least one electronic parallel storage of the differences layer utilizing at least one time sequenced value, string, code, or key."

117. For instance, an Oracle Security Module is deployed for each collateral type (each a descriptive difference by collateral token identification, e.g. "ETH"for Ether), and it feeds price data for a corresponding collateral type to the Vat. Each record is represented throughout the service as a JSON structure with two fields: timestamp and data. The first one is a UNIX epoch timestamp represented as a number (either integer or floating-point). The system's Medianizer maintains a white-list of Feeds that can be controlled by MakerDAO governance. Every time a new set of price updates is received, the reference price is recalculated and queued into the Oracle Security Module which publishes the price data to the Ethereum blockchain after a predefined set of time.

118. The MakerDAO Multi-Collateral Dai (MCD) System software meets the limitation of "impute at least one measured differential with a descriptive identifier or at least one descriptive identifier to the electronic transaction records of the DCL, wherein a data storage and a processing of the imputing resides on a centralized device or a decentralized device controlled by the specialized computer system."

119. For instance, the MakerDAO protocol requires real-time information about the market price of the collateral assets in Maker Vaults in order to know when to trigger liquidations. Any time the collateral value of a Vault gets closer to its debt, it becomes "risky-er, and the system liquidates Vaults that get too risky. The market price of the assets used as collateral in Vaults determines the amount of Dai that can be minted on the Ethereum blockchain, as well as the grab condition for Vault liquidations, triggering a liquidation and reduction in Dai on the Ethereum blockchain. MakerDAO records transactions on the Ethereum blockchain to either increase or decrease the Dai stable coin.

PRAYER FOR RELIEF

WHEREFORE, True Return respectfully requests the following relief:

(a) judgment in favor of True Return that MakerDAO has infringed, literally or under the doctrine of equivalents, U.S. Patent No. 10,025,797;

(b) a judgment and order finding that MakerDAO's infringement has been willful;

(c) a judgment and order requiring MakerDAO to pay True Return its damages, costs, expenses, prejudgment interest, post-judgment interest, and enhanced damages for MakerDAO's infringement, and to provide an accounting of ongoing post-judgment infringement;

(d) a judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding True Return its reasonable attorneys' fees against MakerDAO;

(e) an order preliminarily enjoining MakerDAO from making, using, selling, or offering for sale the claimed subject matter of U.S. Patent No. 10,025,797;

(f) an order permanently enjoining MakerDAO from making, using, selling, or offering for sale the claimed subject matter of U.S. Patent No. 10,025,797, or such other equitable relief the Court deems warranted; and

(g) any and all other relief any and all other relief as the Court may deem appropriate and just under the circumstances.

DEMAND FOR JURY TRIAL

True Return requests a trial by jury on all issues so triable.

March 9, 2022

Respectfully submitted,

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Counsel for True Return Systems LLC