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Beijing 100085 (CN).(81) Designated States (*unless otherwise indicated, for every
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OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,
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(54) Title: PERFORMING PARALLEL EXECUTION OF TRANSACTIONS IN A DISTRIBUTED LEDGER SYSTEM

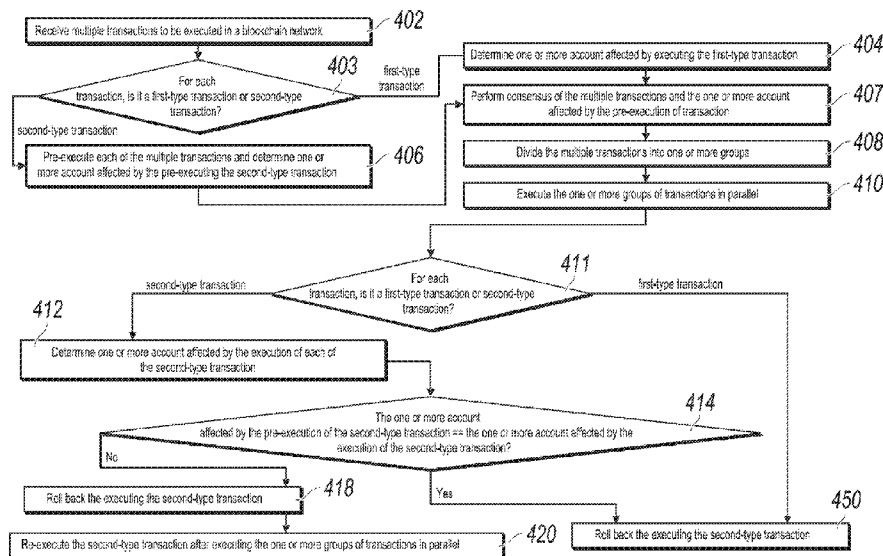


FIG. 4

(57) **Abstract:** Disclosed herein are methods, systems, and apparatus for performing parallel execution of transactions in a blockchain network. One method includes receiving multiple transactions; determining whether each transaction is a first-type or a second-type transaction; for a first-type transaction, determining accounts affected by the first-type transaction; for a second-type transaction, pre-executing the second-type transaction; and determining accounts affected by the pre-executing the second-type transaction; performing a consensus process of the multiple transactions and the accounts affected by the pre-executing the second-type transaction; dividing the multiple transactions into groups; executing groups of transactions in parallel; committing the executing each first-type transaction; if the each of the accounts affected by the executing a second-type transaction are the same as accounts affected by the pre-executing of the second-type transaction and the accounts affected by the executing the second-type transaction are not affected by any previously executed transactions, committing the executing the second-type transaction.

EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV,
MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM,
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INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/082564

A. CLASSIFICATION OF SUBJECT MATTER

G06Q 20/38(2012.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

G06Q, H04L, G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

VEN,SIPOABS,USTXT,EPTXT,WOTXT,CNABS,CNTXT,CNKI:block 1w chain, series, parallel, first, second, group, divide, transaction, conseus, account, pre 1w execut+

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2018157778 A1 (ALIBABA GROUP HOLDING LTD et al.) 07 September 2018 (2018-09-07) the whole document	1-14
A	US 2019087793 A1 (UNIV BROWN) 21 March 2019 (2019-03-21) the whole document	1-14
A	CN 107678865 A (BANK CHINA CO LTD) 09 February 2018 (2018-02-09) the whole document	1-14



Further documents are listed in the continuation of Box C.



See patent family annex.

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“X” document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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“&” document member of the same patent family

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INTERNATIONAL SEARCH REPORT
Information on patent family members

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
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				US	2019361731	A1	28 November 2019
				CN	106980649	A	25 July 2017
				TW	I660281	B	21 May 2019
				SG	11201907212S	A	27 September 2019
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				TW	201833796	A	16 September 2018
				AU	2018228540	A1	22 August 2019
US	2019087793	A1	21 March 2019	None			
CN	107678865	A	09 February 2018	None			