



- (51) **International Patent Classification:**  
H04L 29/06 (2006.01) G06Q 30/00 (2012.01)
- (21) **International Application Number:**  
PCT/CN2019/103780
- (22) **International Filing Date:**  
30 August 2019 (30.08.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**  
PCT/CN2019/094396  
02 July 2019 (02.07.2019) CN  
PCT/CN2019/095299  
09 July 2019 (09.07.2019) CN
- (71) **Applicant: ALIBABA GROUP HOLDING LIMITED**  
[—/CN]; Fourth Floor, One Capital Place, P.O. BOX 847,  
George Town, Grand Cayman (KY).

- (72) **Inventors: YANG, Renhui;** Alibaba Group Legal Department 5/F, Building 3, No.969 West Wen Yi Road, Yu Hang District, Hangzhou, Zhejiang 311121 (CN). **LIU, Jiawei;** Alibaba Group Legal Department 5/F, Building 3, No.969 West Wen Yi Road, Yu Hang District, Hangzhou, Zhejiang 311121 (CN). **CHEN, Yuan;** Alibaba Group Legal Department 5/F, Building 3, No.969 West Wen Yi Road, Yu Hang District, Hangzhou, Zhejiang 311121 (CN). **LIN, Yuqi;** Alibaba Group Legal Department 5/F, Building 3, No.969 West Wen Yi Road, Yu Hang District, Hangzhou, Zhejiang 311121 (CN).
- (74) **Agent: BEIJING BESTIPR INTELLECTUAL PROPERTY LAW CORPORATION;** Room 409, Tower B, Ka Wah Building, No. 9 Shangdi 3rd Street, Haidian District, Beijing 100085 (CN).
- (81) **Designated States** (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN,

(54) **Title:** SYSTEM AND METHOD FOR DECENTRALIZED-IDENTIFIER CREATION

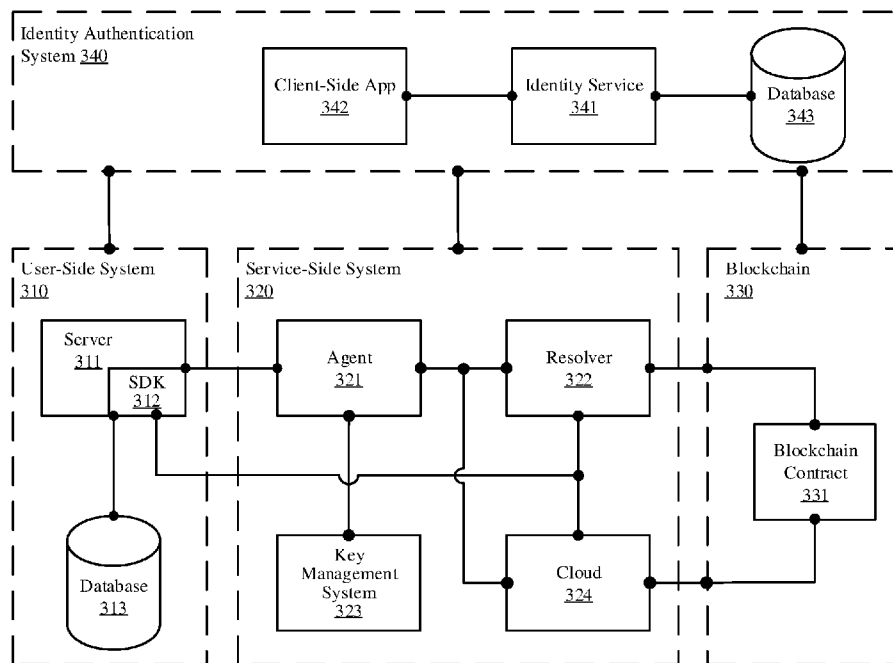


FIG. 3

(57) **Abstract:** Methods, systems, and apparatus, including computer programs encoded on computer storage media, for blockchain-based decentralized-identifier creation, are provided. One of the methods includes: obtaining a request for creating a decentralized identifier (DID), wherein the request comprises a public key of a cryptographic key pair; creating, based on the public key, a blockchain account associated with a blockchain; creating the DID based on information associated with the blockchain account; and returning a confirmation message comprising the created DID.



HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

**(84) Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, 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, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

**Published:**

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*
- *upon request of the applicant, before the expiration of the time limit referred to in Article 21(2)(a)*

**(88) Date of publication of the international search report:**

30 April 2020 (30.04.2020)

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2019/103780

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
H04L 29/06(2006.01)i; G06Q 30/00(2012.01)i		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) H04L; G06Q; 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) WPI, EPODOC, CNKI, CNPAT, IEEE: GUI, block, chain, blockchain, decentralized, distributed, identifier, public, private, key ,account, cryptographic, address, DID		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AYDAR, Mehmet et al. "Towards a blockchain based digital identity verification, record attestation and record sharing system" <i>arXiv:1906.09791v1</i> , 24 June 2019 (2019-06-24), page 6, paragraphs 1-8, page 10, paragraph 5 to page 13, paragraph 2	1-16
A	CN 109918942 A (LINGXIN ZHILIAN BEIJING TECHNOLOGY CO., LTD.) 21 June 2019 (2019-06-21) the whole document	1-16
A	CN 109493082 A (XIAN ZHIGUI INTERNET TECHNOLOGY CO., LTD.) 19 March 2019 (2019-03-19) the whole document	1-16
A	US 2018343126 A1 (NXM LABS INC.) 29 November 2018 (2018-11-29) the whole document	1-16
A	US 2018285996 A1 (FUTURELAB CONSULTING INC.) 04 October 2018 (2018-10-04) the whole document	1-16
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "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 "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search <b>18 March 2020</b>		Date of mailing of the international search report <b>03 April 2020</b>
Name and mailing address of the ISA/CN <b>National Intellectual Property Administration, PRC 6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088 China</b> Facsimile No. (86-10)62019451		Authorized officer <b>JIANG,Xiaoqing</b> Telephone No. 86-(10)-53961427

**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

International application No.

**PCT/CN2019/103780**

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	109918942	A	21 June 2019	None			
CN	109493082	A	19 March 2019	None			
US	2018343126	A1	29 November 2018	US	2019319808	A1	17 October 2019
US	2018285996	A1	04 October 2018	None			