(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 July 2019 (25.07.2019)

WIPO | PCT

(10) International Publication Number
WO 2019/141291 A3

(51) International Patent Classification:
G06F 21/10 (2013.01)

(21) International Application Number:
PCT/CN2019/087600

(22) International Filing Date:
20 May 2019 (20.05.2019)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant: **ALIBABA GROUP HOLDING LIMITED** [—/CN]; Fourth Floor, One Capital Place, P.O. BOX 847, George Town, Grand Cayman (KY).

(72) Inventor: **LI, Zhiguo**; 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, 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,

(54) Title: IDENTIFYING COPYRIGHTED MATERIAL USING EMBEDDED COPYRIGHT INFORMATION

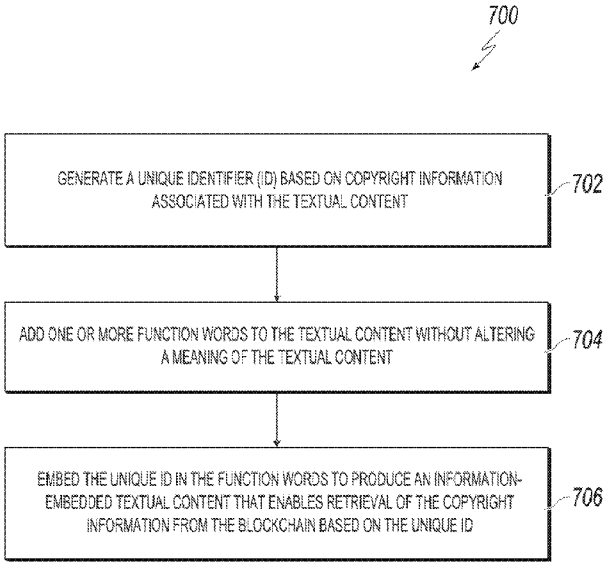


FIG. 7

(57) **Abstract:** Disclosed herein are methods, systems, and apparatus, including computer programs encoded on computer storage media, for identifying copyrighted material based on embedded copyright information. One of the methods includes generating, by a computing device, a unique identifier (ID) based on copyright information associated with the textual content, wherein the text and the copyright information are recorded on a blockchain of a blockchain network; adding, by the computing device, one or more function words to the textual content without altering a meaning of the textual content; and embedding, by the computing device, the unique ID in the function words to produce an information-embedded textual content that enables retrieval of the copyright information from the blockchain based on the unique ID.

WO 2019/141291 A3

[Continued on next page]

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:
12 March 2020 (12.03.2020)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2019/087600

A. CLASSIFICATION OF SUBJECT MATTER

G06F 21/10(2013.01)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)

G06F; H04L

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)

CNPAT,WPI,EPODOC,CNKI: DLS, distributed ledger systems, block chain, copyright, unique identifier, ID, text content, function word

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN 109344568 A (ZHONGAN INFORMATION TECHNOLOGY SERVICE CO., LTD.) 15 February 2019 (2019-02-15) description, paragraphs [0022]-[0035], and figures 1-2	1-15
A	CN 101179571 A (ZHANG, Jianzhong) 14 May 2008 (2008-05-14) the whole document	1-15
A	EP 1837755 A1 (KABUSHIKI KAISHA TOSHIBA) 26 September 2007 (2007-09-26) the whole document	1-15
A	EP 3399458 A1 (CISCO TECHNOLOGY, INC.) 07 November 2018 (2018-11-07) the whole document	1-15

☐ Further documents are listed in the continuation of Box C. ☑ 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	Date of mailing of the international search report
14 January 2020	**12 February 2020**

Name and mailing address of the ISA/CN	Authorized officer
National Intellectual Property Administration, PRC **6, Xitucheng Rd., Jimen Bridge, Haidian District, Beijing 100088** **China**	**KOU,Limin**
Facsimile No. **(86-10)62019451**	Telephone No. **86-(10)-53961731**

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2019/087600

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)			Publication date (day/month/year)
CN	109344568	A	15 February 2019	None			
CN	101179571	A	14 May 2008	None			
EP	1837755	A1	26 September 2007	JP	2007257119	A	04 October 2007
				US	2007226448	A1	27 September 2007
EP	3399458	A1	07 November 2018	CN	108804879	A	13 November 2018
				US	2018322259	A1	08 November 2018