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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
09 April 2020 (09.04.2020)

WIPO | PCT

(10) International Publication Number
WO 2020/072529 A1

(51) International Patent Classification:
*G06Q 20/40* (2012.01) *G06Q 20/22* (2012.01)
*G06Q 20/34* (2012.01) *G06Q 20/10* (2012.01)

(21) International Application Number:
PCT/US2019/054123

(22) International Filing Date:
01 October 2019 (01.10.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

| | | |
|---|---|---|
| 62/740,352 | 02 October 2018 (02.10.2018) | US |
| 16/205,119 | 29 November 2018 (29.11.2018) | US |
| 16/590,113 | 01 October 2019 (01.10.2019) | US |


(71) Applicant: **CAPITAL ONE SERVICES, LLC** [US/US]; 1680 Capital One Drive, McLean, VA 22102 (US).

(72) Inventors: **ILINCIC, Rajko**; 4428 Sleaford Road, Annandale, VA 22003 (US). **RULE, Jeffrey**; 3906 Laird Place, Chevy Chase, MD 20815 (US). **HERRINGTON, Daniel**; 8 Spruce Street, #48D, New York, NY 10038 (US).

(74) Agent: **KASNEVICH, Andrew, D.** et al.; Hunton Andrews Kurth LLP, 2200 Pennsylvania Ave, NW, Washington, DC 20037 (US).

(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, 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))*

(54) Title: SYSTEMS AND METHODS FOR CRYPTOGRAPHIC AUTHENTICATION OF CONTACTLESS CARDS

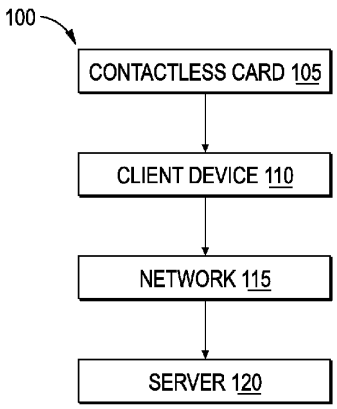


FIG. 1A

(57) Abstract: System and methods of contactless card authentication systems include a contactless card and a client device having an application, a processor, and a card reader. An application on the client device receives a transaction lockdown request, sends a request to the server to begin to allow a transaction approval within a time period, receives the transaction approval via an authentication tap from the contactless card, sends the transaction approval to the server; and receive an allowance or disallowance response from the server.

WO 2020/072529 A1