

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
03 August 2023 (03.08.2023)



(10) International Publication Number
WO 2023/147237 A1

(51) International Patent Classification:
G06F 21/32 (2013.01) *G06F 21/62* (2013.01)
G06F 21/33 (2013.01)

(21) International Application Number:
PCT/US2023/060836

(22) International Filing Date:
18 January 2023 (18.01.2023)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/304,432 28 January 2022 (28.01.2022) US

(71) Applicant: **VISA INTERNATIONAL SERVICE ASSOCIATION** [US/US]; PO BOX 8999, San Francisco, California 94128 (US).

(72) Inventors: **MCCARTER, Ryan**; PO BOX 8999, SAN FRANCISCO, California 94128 (US). **CATNEY, Charles**; PO BOX 8999, SAN FRANCISCO, California 94128 (US). **MCKILLOP, Hugh**; PO BOX 8999, SAN FRANCISCO, California 94128 (US).

(74) Agent: **RACZKOWSKI, David B.** et al.; Kilpatrick, Townsend & Stockton LLP, 1100 Peachtree Street Suite 2800, Atlanta, Georgia 30309 (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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, 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, ST, SV, SY, TH,

(54) Title: MULTI-LEVEL FINGERPRINTS TO DERIVE MISSING DATA DURING RETRY DETECTION

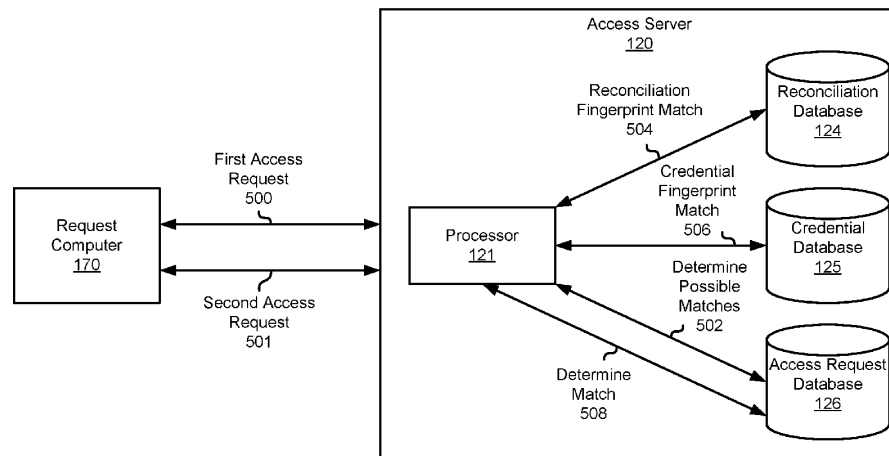


FIG. 5

(57) Abstract: A method performed by an access server is disclosed. The method including receiving a first access request including various fields of data for accessing a resource. The method may then generate a first fingerprint using a first value of a first field of the first access request and store the first fingerprint. After, the access server may receive a second access request, and generate a second fingerprint using a second value of the first field of the second access request. Then the first fingerprint can be compared to the second fingerprint to determine a possible match of the second access request to the first access request. A database is accessed using data of the first or second access request, to retrieve missing data in the first or second access request. The missing data can be compared to a corresponding field of the other access request to confirm a match.

[Continued on next page]

TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, 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, ME, 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).

Declarations under Rule 4.17:

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *with international search report (Art. 21(3))*