



(51) International Patent Classification:
H04L 9/32 (2006.01)

(21) International Application Number:
PCT/CN2020/124073

(22) International Filing Date:
27 October 2020 (27.10.2020)

(25) Filing Language: English

(26) Publication Language: English

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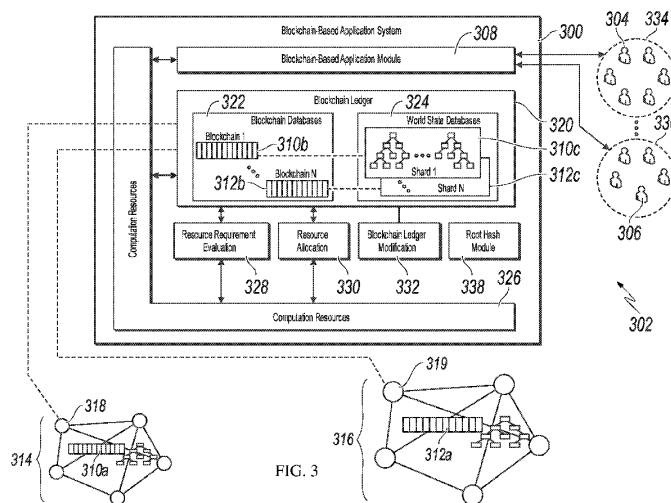
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, 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, ST, SV, SY, TH, 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, 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,

(54) Title: BLOCKCHAIN SYSTEM HAVING EFFICIENT WORLD STATE DATA STRUCTURES



(57) Abstract: Disclosed herein are methods, systems, and apparatus, including computer programs encoded on computer storage media, for processing world state information associated with one or more blockchains. One of the methods includes: providing a group world state that includes a plurality of shards, in which each shard includes a world state database. The world state database includes a plurality of world states, each world state stores information about states of user accounts associated with the world state, each shard is associated with a blockchain database that includes a blockchain that includes one or more blocks that store transaction data associated with the user accounts associated with the blockchain. The method includes dynamically modifying a number of shards in the group world state based on one or more criteria, including at least one of (i) partitioning one of the shards into two or more shards, (ii) merging two or more shards into one shard, (iii) adding one or more new shards to the group world state, or (iv) removing one or more shards from the group world state; and generating a root hash value of the group world state.

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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))*