

(19) World Intellectual Property
Organization
International Bureau



(10) International Publication Number

WO 2022/272187 A9

(43) International Publication Date
29 December 2022 (29.12.2022)

WIPO | PCT

(51) International Patent Classification:

H01M 10/44 (2006.01) H02J 7/02 (2016.01)
H02J 7/00 (2006.01) H01M 10/42 (2006.01)

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(21) International Application Number:

PCT/US2022/041035

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(22) International Filing Date:

22 August 2022 (22.08.2022)

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(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

17/357,764 24 June 2021 (24.06.2021) 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,

(54) Title: CHARGING DEVICE AND METHOD OF CHARGING AND REJUVENATING BATTERY

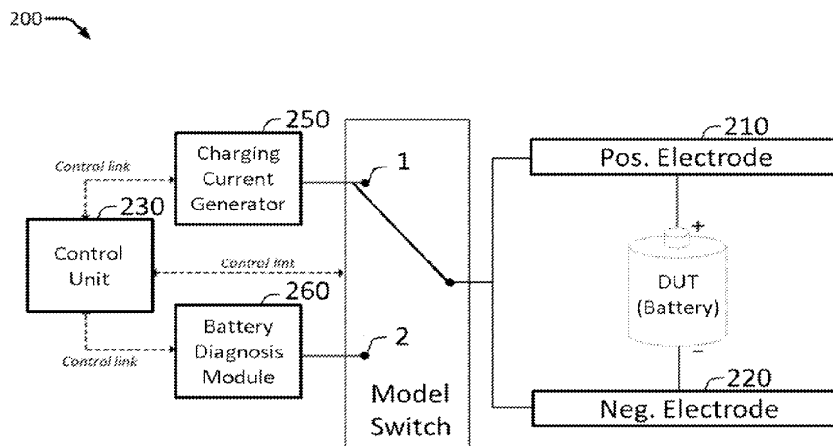


FIG. 2

(57) Abstract: Various embodiments of a battery charging apparatus are disclosed, along with methods of charging and rejuvenating a battery using the apparatus. The apparatus may include a positive electrode and a negative electrode which are configured to connect to a battery, and a charging current generator generating a charging current that charges the battery for a period of time via the positive and negative electrodes by adding electric charge to the battery. The charging current is generated based on parameters of the battery, including a charging constant and an initial charging state. In some embodiments, a natural logarithm of a ratio of the added electric charge to the initial charging state substantially equals to a product of the charging constant and a length of the period of time and negative one.

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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, 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))*
- *with information concerning request for restoration of the right of priority in respect of one or more priority claims; the decision of the receiving Office regarding the request for restoration is pending and will be published separately once available (Rules 26bis.3 and 48.2(j))*

(48) Date of publication of this corrected version:

16 February 2023 (16.02.2023)

(15) Information about Correction:

see Notice of 16 February 2023 (16.02.2023)