

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
20 October 2022 (20.10.2022)



(10) International Publication Number
WO 2022/219577 A1

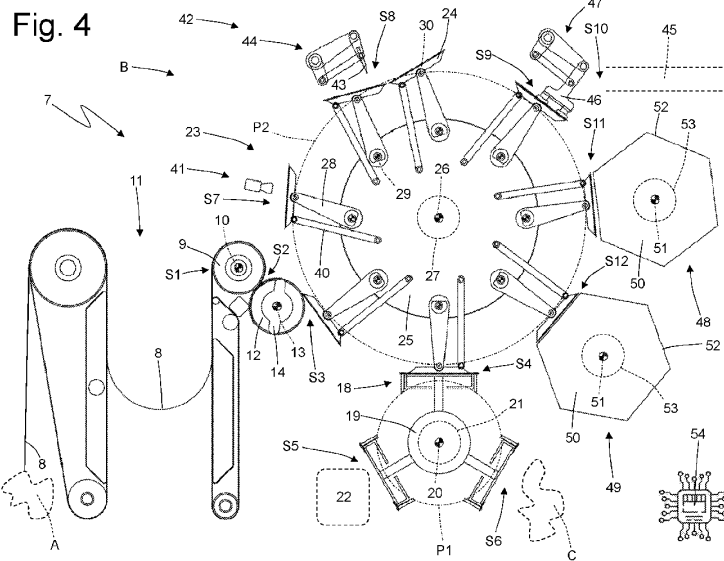
- (51) International Patent Classification:
H01M 10/0585 (2010.01) *H01M 10/04* (2006.01)
- (21) International Application Number:
PCT/IB2022/053518
- (22) International Filing Date:
14 April 2022 (14.04.2022)
- (25) Filing Language: Italian
- (26) Publication Language: English
- (30) Priority Data:
102021000009644 16 April 2021 (16.04.2021) IT
- (71) Applicant: **MANZ ITALY S.R.L.** [IT/IT]; Via San Lorenzo, 19, 40037 Sasso Marconi (BO) (IT).
- (72) Inventors: **ALONGI, Pasqualino**; c/o Manz Italy S.r.l., Via San Lorenzo, 19, 40037 Sasso Marconi (BO) (IT).

SALE, Massimiliano; c/o Manz Italy S.r.l., Via San Lorenzo, 19, 40037 Sasso Marconi (BO) (IT). **CIRINO, Sergio**; c/o Manz Italy S.r.l., Via San Lorenzo, 19, 40037 Sasso Marconi (BO) (IT). **ZAMBONELLI, Luca**; c/o Manz Italy S.r.l., Via San Lorenzo, 19, 40037 Sasso Marconi (BO) (IT).

(74) Agent: **STUDIO TORTA S.P.A.**; Via Viotti, 9, 10121 Torino (IT).

(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, JM, 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,

(54) Title: STACKING METHOD AND STACKING UNIT TO FORM A STACK OF ELECTROCHEMICAL CELLS OF AN ELECTRIC BATTERY



(57) Abstract: Stacking method for forming a stack (1) of electrochemical cells (2) of an electric battery and having the steps of: cyclically advancing at least one gripping head (24) suitable for receiving and retaining an electrochemical cell (2) along a transfer path (P2) by means of a transfer conveyor (23); feeding, at a gripping station (S3) which is arranged along the transfer path (P2), a single electrochemical cell (2) to the gripping head (24); and releasing, at a release station (S4) which is arranged along the transfer path (P2) downstream of the first gripping station (S3), from the gripping head (24) a single electrochemical cell (2) into a forming container (18) configured to receive in succession the single electrochemical cells (2) which are arranged successively one on top of the other to form the stack (1). The stack (1) comprises a plurality of standard electrochemical cells (2) and a single terminal electrochemical cell (2) which is arranged last on top of the stack (1) and concludes the formation of the stack (1).

[Continued on next page]

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))*
 - *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*
-