

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
04 June 2020 (04.06.2020)



(10) International Publication Number
WO 2020/112125 A1

(51) International Patent Classification:

C23C 14/24 (2006.01) C23C 14/56 (2006.01)
C23C 14/30 (2006.01) F27B 14/12 (2006.01)

(21) International Application Number:

PCT/US2018/063180

(22) International Filing Date:

30 November 2018 (30.11.2018)

(25) Filing Language:

English

(26) Publication Language:

English

(71) Applicant: **FERROTEC (USA) CORPORATION**
[US/US]; 3945 Freedom Circle, Suite 450, Santa Clara, California 95054 (US).

(72) Inventor: **KRONEBERGER, Cris**; 427 Andrea Circle, Livermore, California 94550 (US).

(74) Agent: **DELEAULT, Robert R.**; Mesmer & Deleault, PLLC, 41 Brook Street, Manchester, New Hampshire 03104 (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,

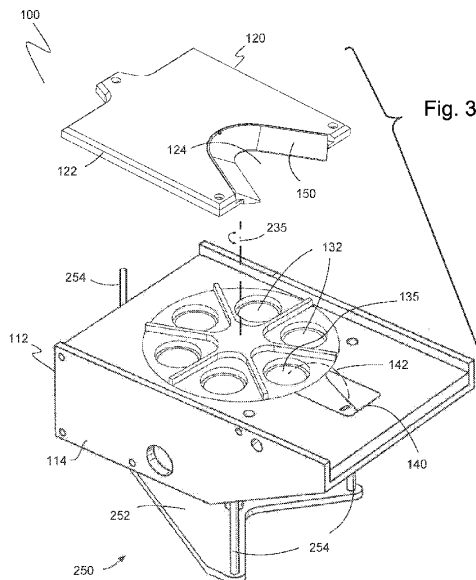
KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(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: CRUCIBLE COVER FOR COATING WITH AN ELECTRON BEAM SOURCE



(57) Abstract: A cover arrangement comprised of at least two pieces for covering a crucible within an electron beam source assembly. The cover includes a cover body and a cover insert to be separate from and carried by the cover body, when the cover body is raised and lowered. This arrangement also allows the cover insert to be lowered until it comes to rest on top of the crucible. Upon contact between the cover insert and the crucible, the cover insert can partially decouple from the cover body, allowing the cover body to travel down slightly further, allowing it to come into contact with the water-cooled body that surrounds the crucible, while insuring that the crucible insert is in good contact with the crucible. Closing this gap helps stop material that is evaporating from the active crucible pocket from migrating to inactive pockets, located under the cover, during the evaporation process.

WO 2020/112125 A1