



- (51) **International Patent Classification:**
H01J 37/244 (2006.01) *H01J 37/145* (2006.01)
- (21) **International Application Number:**
PCT/EP2021/058832
- (22) **International Filing Date:**
06 April 2021 (06.04.2021)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
63/008,457 10 April 2020 (10.04.2020) US
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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, 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).

(54) **Title:** CHARGED PARTICLE BEAM APPARATUS WITH MULTIPLE DETECTORS AND METHODS FOR IMAGING

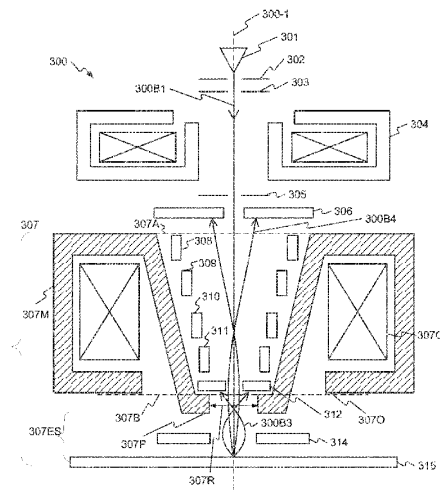


FIG. 3

(57) **Abstract:** Systems and methods of imaging a sample using a charged- particle beam apparatus are disclosed. The charged-particle beam apparatus may include a compound objective lens (307) comprising a magnetic lens (307M) and an electrostatic lens (307ES), the magnetic lens comprising a cavity, and an electron detector (312) located immediately upstream from a polepiece of the magnetic lens and inside the cavity of the magnetic lens. In some embodiments, deflectors may be located between the electron detector and the opening of the polepiece adjacent to the sample to achieve a large field of view. Electron distributions among the detectors can be manipulated without changing the landing energy by changing the potential of the control electrode(s) in the electrostatic objective lens. The electron source can be operated with several discrete potentials to cover different landing energies, while the potential difference between electron source and the extractor is fixed.

Published:

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