

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

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
06 August 2020 (06.08.2020)



(10) International Publication Number  
**WO 2020/157167 A2**

(51) International Patent Classification:  
C22B 9/02 (2006.01) B01D 3/14 (2006.01)  
C22C 13/00 (2006.01)

(21) International Application Number:  
PCT/EP2020/052225

(22) International Filing Date:  
30 January 2020 (30.01.2020)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
19154610.0 30 January 2019 (30.01.2019) EP

(71) Applicant: METALLO BELGIUM [BE/BE]; Nieuwe Dreef 33, 2340 Beerse (BE).

(72) Inventors: GOVAERTS, Koen; Nieuwe Dreef 33, 2340 Beerse (BE). LEMMENS, Pelle; Nieuwe Dreef 33, 2340 Beerse (BE). MANNAERTS, Kris; Nieuwe Dreef 33, 2340 Beerse (BE). GORIS, Jan, Dirk, A.; Nieuwe Dreef 33, 2340 Beerse (BE). DE VISSCHER, Yves; Nieuwe Dreef 33, 2340 Beerse (BE). GEENEN, Charles; Nieuwe Dreef 33, 2340 Beerse (BE). COLETTI, Bert; Nieuwe Dreef 33, 2340 Beerse (BE).

(74) Agent: GEVERS PATENTS; Holidaystraat 5, 1831 Diegem (BE).

(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, 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: IMPROVED TIN PRODUCTION

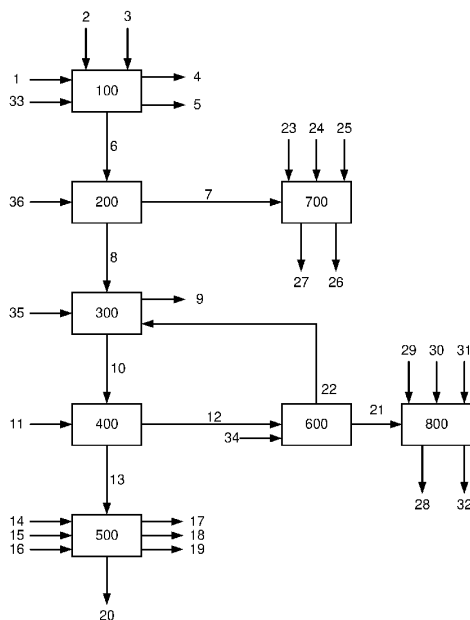


Figure 1

(57) Abstract: Disclosed is a process for the separation by fractional crystallisation (300) of a molten crude tin mixture (8) containing lead and silver, into a first silver-enriched liquid drain product (9) at the liquid end of the crystallisation step and a first tin-enriched product (10) at the crystal end of the crystallisation step whereby the first silver-enriched liquid drain product comprises on a dry weight basis 6.0-30.0%wt of lead, 70.0-91 %wt of tin, 95.0- 99.0%wt of lead and tin together, 0.75-5.00%wt of silver, and  $\geq 0.24\%$ wt of antimony. Further disclosed is a metal composition (9) comprising 6.0-30.0%wt of lead, 70.0-91 %wt of tin, 95.0-99.0%wt of lead and tin together, 0.75-5.00%wt of silver, and  $\geq 0.24\%$ wt of antimony.

WO 2020/157167 A2

[Continued on next page]

**Published:**

- *without international search report and to be republished  
upon receipt of that report (Rule 48.2(g))*