

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
26 May 2005 (26.05.2005)

PCT

(10) International Publication Number
WO 2005/046877 A1

(51) International Patent Classification⁷: **B03C 3/00**,
B01D 53/32, 35/06

(21) International Application Number:
PCT/IB2004/003722

(22) International Filing Date:
12 November 2004 (12.11.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

2003/1474.1	17 November 2003 (17.11.2003)	KZ
2003/1475.0	17 November 2003 (17.11.2003)	KZ
2003/1635.1	1 December 2003 (01.12.2003)	KZ
2003/1686.1	10 December 2003 (10.12.2003)	KZ
2004/0911.1	28 June 2004 (28.06.2004)	KZ
2004/0924.1	30 June 2004 (30.06.2004)	KZ

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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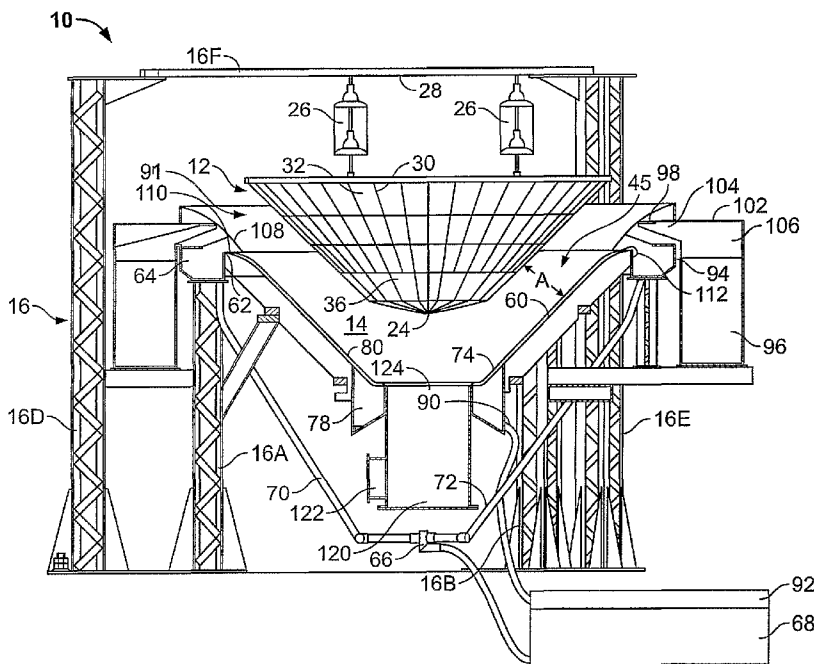
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Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

[Continued on next page]

(54) Title: APPARATUS AND METHOD FOR REDUCING AND REMOVING AIRBORNE OXIDIZED PARTICULATES



(57) Abstract: An apparatus (10) and method for recovering elemental carbon, elemental sulfur, elemental iron, elemental gold and other elemental materials from an air flow including a funnel-shaped receptor (14) and an inverted cone-shaped electrode node body (12) spaced from the funnel receptor, a funnel-shaped reaction zone (45) between the outer surface of the electrode node body and the inner surface (60) of the receptor for receiving the air flow, and a plurality of point source electrodes (36) mounted to the electrode node body (12) and projecting into the reaction zone (45). The electrode node body (12) and the receptor (14) are electrically isolated from each other, the receptor (14) is connected to ground, and a voltage source is electrically connected to the electrode node body (12). The apparatus and method may be used

for treating an air flow containing pollutants generated from the burning of fossil fuels, trash and other materials to reduce the oxides to elemental matter and water and to remove the elemental matter from the air flow, for treating emissions of coal-operated power plants to improve their efficiency by recovering carbon from the plant emissions and reusing the recovered carbon as fuel, to reduce landfill requirements by burning trash in incinerators and treating the incinerator emissions to recover elemental material which is then landfilled in far less space than the original unburned trash, and to produce valuable elemental material such as fullerenes.

WO 2005/046877 A1



Published:

— with international search report

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