

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
16 May 2002 (16.05.2002)

PCT

(10) International Publication Number
WO 02/38279 A1

(51) International Patent Classification⁷: **B04C 5/081**

(21) International Application Number: PCT/EP01/13032

(22) International Filing Date:
7 November 2001 (07.11.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
00203901.4 7 November 2000 (07.11.2000) EP

(71) Applicant (for all designated States except US): **SHELL
INTERNATIONALE RESEARCH MAATSCHAPPIJ
B.V.** [NL/NL]; Carel van Bylandtlaan 30, NL-2596 HR
The Hague (NL).

(72) Inventors; and

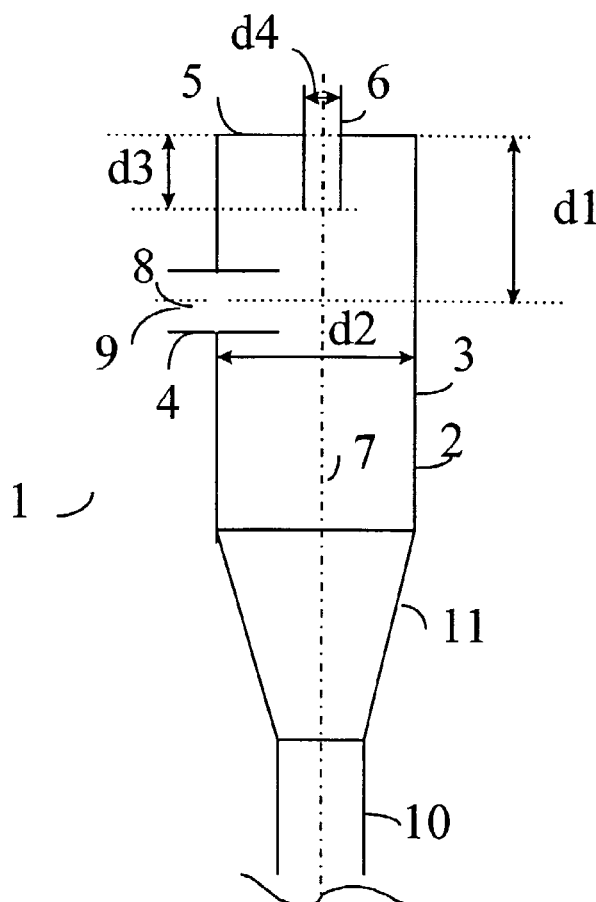
(75) Inventors/Applicants (for US only): **EKKER, Andreas**
[NO/NL]; Badhuisweg 3, NL-1031 CM Amsterdam (NL).
DE KORT, Cornelis, Josephus, Maria [NL/NL]; Bad-
huisweg 3, NL-1031 CM Amsterdam (NL).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, 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, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG,
SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,
YU, ZA, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian
patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European
patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE,

[Continued on next page]

(54) Title: VERTICAL CYCLONE SEPARATOR



(57) Abstract: Vertical cyclone vessel (1) having a tubular housing (2) comprising of a tubular wall section (3) provided with a tangentially arranged inlet (3) for receiving a suspension of gas and solids and an elevated cover (5) which closes the upper end of the tubular wall section, wherein a gas outlet conduit (6) significantly protrudes from above and along the axis (7) into the tubular housing to at most the horizontal position of the centre of the tangentially arranged inlet.



IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.