

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
2 March 2006 (02.03.2006)

PCT

(10) International Publication Number
WO 2006/023071 A1

(51) International Patent Classification⁷: **C10G 11/18**,
B01J 8/18, 8/24, 8/08, 19/26, 4/00, B01F 5/04, 3/04

(21) International Application Number:
PCT/US2005/022755

(22) International Filing Date: 24 June 2005 (24.06.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/590,599 23 July 2004 (23.07.2004) US

(71) Applicant (for all designated States except US): **EXXON-MOBIL RESEARCH AND ENGINEERING COMPANY** [US/US]; 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **STEFFENS, Todd, R.** [US/US]; 15469 Eagle Tavern Lane, Centreville, VA 20120 (US). **HEWITT, Thomas, E.** [US/US]; 6013 Rock Cliff Lane, Apt. J, Alexandria, Virginia 22315 (US). **DAVULURI, Rathna, P.** [IN/US]; 4879 Annamohr Drive, Fairfax, VA 22030 (US). **FELIZ, Enrique** [US/US]; 6322 Sevenleaf Lane, Kingwood, Texas 77345 (US).

(74) Agents: **HUGHES, Gerald, J.** et al.; ExxonMobil Research and Engineering Company, 1545 Route 22 East, P.O. Box 900, Annandale, NJ 08801-0900 (US).

(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, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

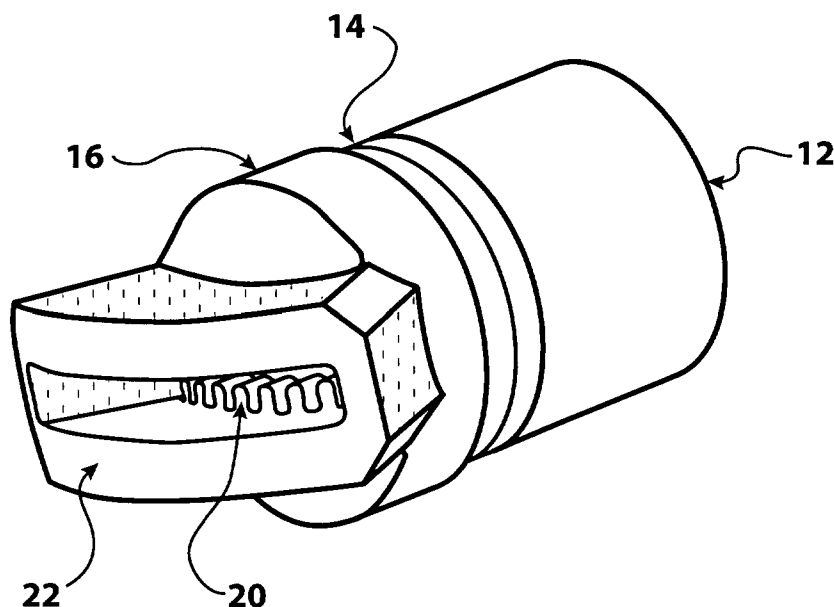
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, 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).

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.

(54) Title: FEED INJECTOR



(57) Abstract: This invention relates to an apparatus and process for atomizing a petroleum feed. More particularly, a liquid petroleum feed is atomized with an atomization apparatus in which the apparatus has an orifice that produces a generally flat spray pattern of finely dispersed feed prior to contacting catalyst in a fluid catalytic cracking zone. The orifice has a general aspect ratio greater than 1.0 and a ratio of perimeter length-to-cross-sectional area greater than 1.5 relative to a perimeter-to-cross-sectional area ratio of a circular orifice of equivalent area. The apparatus can be used to atomize feed injected into the cracking zone of a fluid catalytic cracker.

WO 2006/023071 A1