

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
26 September 2002 (26.09.2002)

PCT

(10) International Publication Number
WO 02/074436 A1

(51) International Patent Classification⁷: **B01J 19/10**,
C02F 1/36, B06B 3/00

(21) International Application Number: PCT/GB02/01283

(22) International Filing Date: 18 March 2002 (18.03.2002)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0106483.1 16 March 2001 (16.03.2001) GB

(71) Applicant (for all designated States except US): **WS ATKINS CONSULTANTS LIMITED** [GB/GB]; Woodcote Grove, Ashley Road, Epsom, Surrey KT18 5BW (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **CLARK, Piers, Benedict** [GB/GB]; 61 Downswood, Epsom Down, Epsom, Surrey KT18 5UJ (GB).

(74) Agents: **SUËR, Steven, Johannes** et al.; Ablett & Stebbing, Caparo House, 101-103 Baker Street, London W1U 6FQ (GB).

(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, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.

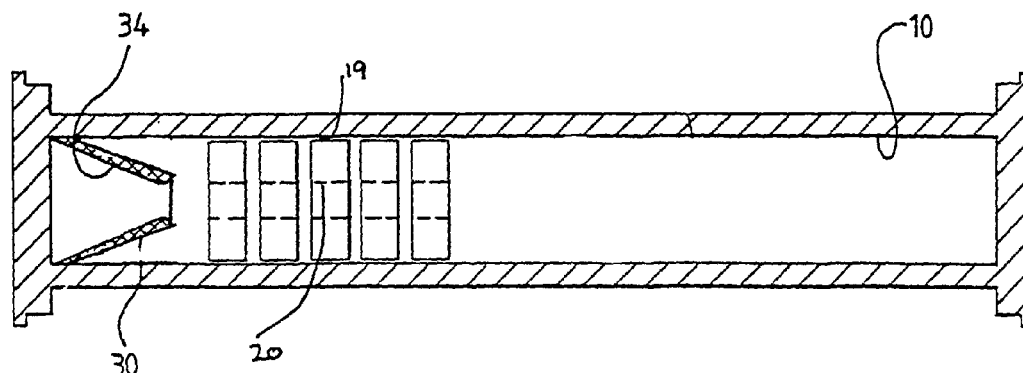
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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: APPARATUS FOR TREATING FLUIDS WITH ULTRASOUNDS



(57) Abstract: The present invention relates to a fluid processing apparatus for use in an elongate passage (10), the apparatus comprising one or more means for applying ultrasonic energy to fluid (16) within the passage (10) and means for constraining flow of fluid (30) towards the longitudinal axis of the elongate passage.



WO 02/074436 A1