

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
24 August 2006 (24.08.2006)

PCT

(10) International Publication Number
WO 2006/088432 A1

(51) International Patent Classification:
B08B 9/04 (2006.01) *F28G 1/12* (2006.01)

(21) International Application Number:
PCT/SG2005/000413

(22) International Filing Date:
2 December 2005 (02.12.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
200501166-3 17 February 2005 (17.02.2005) SG

(71) Applicant (for all designated States except US): **HYDROACTIVE VELOBALL INTERNATIONAL**; Block 341 #10-13 Upper Bukit Timah Road, Singapore 588195 (SG).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **CHOW, Kok, Heng** [MY/SG]; Block 341 #10-13 Upper Bukit Timah Road, Singapore 588195 (SG).

(74) Agent: **NG, Kim, Tean**; Nanyang Law LLC, P.O. Box 1861, Robinson Road Post Office, Singapore 903711 (SG).

(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, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, 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, LV, 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).

Declaration under Rule 4.17:

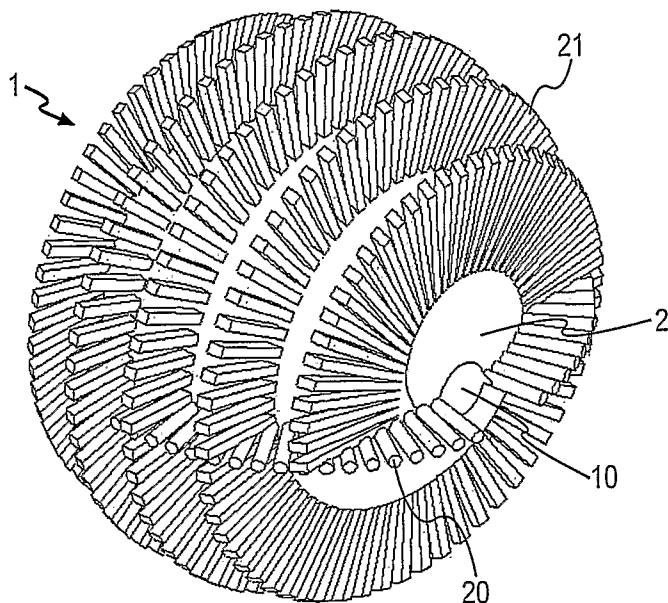
— of inventorship (Rule 4.17(iv))

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: DEVICE FOR CLEANING TUBES



(57) Abstract: The present invention provides a device for cleaning tubes, in particular the internal surfaces of tubes in heat exchange systems. The device comprises a mass (2) with an optionally provided central aperture (10) disposed thereon, and optionally provided a plurality of protrusions (20, 21) mounted and/or moulded on the mass (2). The aperture (10) is preferably of a conical shape-like configuration. A plurality of first protrusions (20) is disposed in a fin-like arrangement on the mass (2). A plurality of second protrusions (21) is disposed in a spiral arrangement on the mass (2), and the lengths of the second protrusions (21) are relatively longer than the length of the first protrusions (20). The mass may consist of an asymmetrically positioned weighted core (15) of different weights and sizes to provide a variety of relative density to the device and to serve as a geometrical manipulation to impart rotational momentum and random dynamic motion to the device.

WO 2006/088432 A1