

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/035282 A2

(51) International Patent Classification⁷: **B29B 7/42**

(21) International Application Number:
PCT/EP2003/011371

(22) International Filing Date: 14 October 2003 (14.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
02023466 21 October 2002 (21.10.2002) EP

(71) Applicant (for all designated States except US): **BASF AKTIENGESELLSCHAFT** [DE/DE]; 67056 Ludwigshafen (DE).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **NIKOLAI, Hartmut** [DE/DE]; Weinbergstr.11, 67149 Meckenheim (DE). **GRITTMANN, Ernst-Jürgen** [DE/DE]; Werderstr.35a, 67069 Ludwigshafen (DE).

(74) Common Representative: **BASF AKTIENGESELLSCHAFT**; 67056 LUDWIGSHAFEN (DE).

(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, 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, 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.

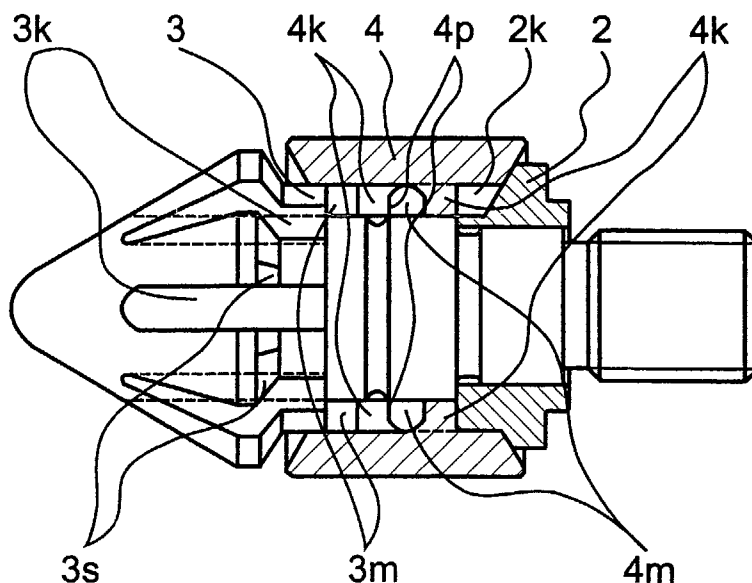
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ,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

Published:

— without international search report and to be republished upon receipt of that 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: MIXING DEVICE



(57) Abstract: A device comprising a shaft (1), a front ring (2), which is non-positively and positively connected to this shaft, an end ring (3), which is non-positively and positively connected to the shaft at a distance A from the front ring, and a loose mixing ring (4), which is freely rotatable and located between the front ring and the end ring, wherein the front ring and the end ring in each case have at least one channel (2k) or (3k), respectively, which runs axially parallel, at an angle in relation to the axis of the shaft or helically, and has in each case at least two regions (2b1 and 2b2) or (3b1 and 3b2) of different outside diameters, of which the region with the smaller outside diameter (2b2) or (3b2) is respectively located on the side facing the mixing ring, and the mixing ring has a first region (4b1) in which its inside diameter is large enough for it to be able to overlap with the region of smaller diameter of the front

ring (2b2), has an adjoining region (4b2) in which the mixing ring has on its inner side at least one channel (4k) which runs axially parallel, at an angle in relation to the axis of the shaft or helically thereto, and also an adjoining third region (4b3), in which its inside diameter is large enough for it to be able to overlap with the region of smaller diameter of the end ring (3b2) and the mixing ring is so long that, in its respective end positions, the other of the two rings (2) or (3) respectively is partially overlapped by the mixing ring.