

Title (en)  
TOOTHBRUSH AND THE PROCESS FOR ITS MANUFACTURE

Title (de)  
ZAHNBÜRSTE UND VERFAHREN ZU IHRER HERSTELLUNG

Title (fr)  
BROSSE A DENTS ET PROCEDE DE FABRICATION CORRESPONDANT

Publication  
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Application  
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Abstract (en)  
[origin: US6161243A] PCT No. PCT/EP96/03873 Sec. 371 Date Aug. 11, 1998 Sec. 102(e) Date Aug. 11, 1998 PCT Filed Sep. 4, 1996 PCT Pub. No. WO97/09907 PCT Pub. Date Mar. 20, 1997A toothbrush has a brush head and plastic bristles, optionally combined into bundles, fixed thereto and whereof at least some bristles have a profile on their circumferential surface. In order in the case of unchanged strength characteristics of the bristles to obtain an increased cleaning and massaging action, the bristles have a helix as the profile. The bristles can comprise a core and at least one helix running over the circumferential surface. For the manufacture of the toothbrush it is possible to extrude and then twist a profiled monofilament or a monofilament with axially parallel ribs and then fix the twist. It is also possible to co-extrude a monofilament made from one plastic with ribs made from a plastic having other characteristics running over its circumferential surface, followed by the twisting of the co-extruded composite and the fixing of the twist.

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IPC 8 full level  
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Cited by  
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**US 6161243 A 20001219**; AR 003561 A1 19980805; AT E182758 T1 19990815; AU 6931396 A 19970401; AU 707521 B2 19990715; BR 9610598 A 19990706; CA 2231532 A1 19970320; CN 1105534 C 20030416; CN 1195973 A 19981014; CZ 287243 B6 20001011; CZ 70298 A3 19981014; DE 19533815 A1 19970320; DE 59602652 D1 19990909; DK 0850004 T3 20000306; EP 0850004 A1 19980701; EP 0850004 B1 19990804; ES 2135917 T3 19991101; GR 3031759 T3 20000229; HU 220851 B1 20020629; HU P9900658 A2 19990628; HU P9900658 A3 19991129; IL 123449 A0 19980924; IL 123449 A 20010520; IN 188998 B 20021207; JP H11513269 A 19991116; KR 100452562 B1 20041217; KR 19990044193 A 19990625; MX 9802010 A 19980830; NO 314977 B1 20030623; NO 981085 D0 19980312; NO 981085 L 19980312; NZ 330176 A 19990830; PL 183811 B1 20020731; PL 325521 A1 19980803; RU 2157078 C2 20001010; SK 27698 A3 19981104; SK 284771 B6 20051103; TR 199800455 T1 19980521; TW 312615 B 19970811; UA 55395 C2 20030415; WO 9709907 A1 19970320; ZA 967701 B 19970325

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**US 4314198 A 19980811**; AR 10431996 A 19960911; AT 96930161 T 19960904; AU 6931396 A 19960904; BR 9610598 A 19960904; CA 2231532 A 19960904; CN 96196936 A 19960904; CZ 70298 A 19960904; DE 19533815 A 19950913; DE 59602652 T 19960904; DK 96930161 T 19960904; EP 9603873 W 19960904; EP 96930161 A 19960904; ES 96930161 T 19960904; GR 990402850 T 19991104; HU P9900658 A 19960904; IL 12344996 A 19960904; IN 1586CA1996 A 19960906; JP 51161797 A 19960904; KR 19980701429 A 19980226; MX 9802010 A 19980313; NO 981085 A 19980312; NZ 33017696 A 19960904; PL 32552196 A 19960904; RU 98106844 A 19960904; SK 27698 A 19960904; TR 9800455 T 19960904; TW 85110961 A 19960907; UA 98041877 A 19960904; ZA 967701 A 19960912