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Kumar

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(54) **PROPHY CUP FOR DENTAL HANDPIECE**

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(52) **U.S. Cl.**
USPC **433/166**; 433/125; 433/116

(58) **Field of Classification Search**
USPC 433/165, 166, 116, 124, 125, 126
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,028,233 A * 7/1991 Witherby 433/125
5,131,846 A * 7/1992 Hall 433/116

5,348,473 A * 9/1994 Kivlighan, Jr. 433/114
5,380,202 A * 1/1995 Brahler 433/166
5,584,690 A * 12/1996 Maassarani 433/125
5,775,905 A * 7/1998 Weissenfluh et al. 433/166
5,797,744 A * 8/1998 Rosenberg 433/166
6,203,322 B1 * 3/2001 Kraenzle 433/125
6,273,716 B1 * 8/2001 Wade 433/116
6,948,934 B2 * 9/2005 Wade 433/116

* cited by examiner

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(57) **ABSTRACT**

A prophy cup has an outer surface with dimples formed therein. The dimples increase the turbulent flow in a boundary layer proximate to the surface. The increased turbulent flow reduces the separation of fluid (a slurry of saliva, blood and pumice) at the boundary layer to minimize the quantity of fluid ejected from the surface. A dental handpiece housing is configured to split longitudinally so that a wiper is positioned proximate to the outer surface of the prophy cup. The wiper removes slurry as the prophy cup rotates during a dental cleaning procedure to further reduce the quantity of fluid ejected from the surface during the procedure.

6 Claims, 4 Drawing Sheets

