engagement surface 116 of the brush 110 and prevent slippage between the brush 110 and the brush core 130.

[0024] Preferably, the outer surface 133 of the body section 132 includes four or more even number of sides 134, allowing for the body section 132 to apply a more even rotational force onto the surface 106 of the substrate 104 being polished or cleaned.

[0025] In addition to edges 135, to further prevent axial movement between the brush 110 and the brush core 130, the profile or contour of the outer surface 133 or each side 134 may be interrupted by a brush engagement member 140. Axial movement is defined herein as movement along a rotational direction α about the rotational axis a_1. Brush engagement member 140 is any feature which interrupts the general contour of outer surface 133 in order to better engage the inner engagement surface 116 of the brush 110. Brush engagement member 140 includes such features as a band 142 or a series of bands 142 or a ridge 145 or series of ridges 145 at any number of locations along the outer surface 133 or along a side 134 to effectively axially secure the brush 110 to the brush core 130, as shown in FIGS. 2A-2F and 3.

[0026] Bands 142 extend along a length of the brush core 130, parallel to the rotational axis a_1 of the brush core 130, as shown in FIGS. 2A and 2B. Preferably, pores 156 are formed from the outer surface 133 of the body section 132 to a fluid channel 150 for flowing polishing fluid from the fluid channel 150 to the outer surface 133 of the body section 132 and to the brush 110. Ridges 145 are formed on the outer surface 133 between a pair of depressions 144, as seen in FIG. 2B. The bands 142 and ridges 145 help to better engage the inner engagement surface 116 of the brush 110 by creating an outer surface 133 with interruptions.

[0027] As a result of edges 135 and brush engagement members 140, the physical fit between the outer surface 133 of the brush core 130 and the inner engagement surface 116 of the brush 110 provides significant resistance to slipping. This

CLAIMS

1. A brush and brush core comprising:

a one-piece cylindrical brush having a length, and an inner engagement surface defining a hollow bore; the brush being continuous along its length; and

a brush core comprising a one-piece body section having a length and forming an outer surface for directly engaging the inner engagement surface of the cylindrical brush, a rotational axis is defined along the length of the brush core, the outer surface of the one-piece body section defining a perimeter of the one-piece body section and forming a contour along the length of the one-piece body section, the contour including three or more apexes, each apex configured as an edge which directly engages the inner engagement surface of the brush, the apexes extending along the length of the brush core, the contour further including a flat side extending continuously between each set of adjacent apexes, the flat side extending along the length of the brush core, the edges and sides continuously alternating around the perimeter of the one-piece body section.

2. The brush and brush core of claim 1, wherein the outer surface of the one-piece body section is interrupted by at least one brush engagement member.

3. The brush and brush core of claim 1, wherein the one-piece body section forms a fluid channel for receiving fluid along an axis of the one-piece body section, and wherein the b one-piece body section forms a pore from the outer surface of the one-piece body section to the fluid channel for flowing fluid from the fluid channel to the outer surface of the one-piece body section.

4. The brush and brush core of claim 1, further comprising a rotational engagement member extending from one end of the one-piece body section, the rotational engagement member having an outer engagement surface which has two or more sides, the outer engagement surface capable of engaging a rotational device for causing rotation of the brush core and brush.

5. The brush and brush core of claim 2, wherein the brush engagement members are bands or ridges.

6. The brush and brush core of claim 1, further comprising a plurality of spaced apart depressions formed in the outer surface, the depressions being spaced from each other along the length of the brush core.

7. The brush and brush core of claim 6, wherein the depressions are linearly aligned along the length of the brush core.

8. The brush and brush core of claim 6, wherein a plurality of sets of the depressions are provided, each set having depressions which are linearly aligned along the length of the brush core.

9. The brush and brush core of claim 8, further comprising at least one band extending along a predetermined portion of the length of the brush core, the band being formed as an elongated depression in the outer surface of the brush core.

10. The brush and brush core of claim 9, wherein the band separates adjacent depressions around a perimeter of the brush core.

11. The brush and brush core of claim 9, wherein the band does not extend the entire length of the brush core.

12. The brush and brush core of claim 6, further comprising at least one band extending along a predetermined portion of the length of the brush core, the band being formed as an elongated depression in the outer surface of the brush core.

13. The brush and brush core of claim 12, wherein respective bands separate adjacent depressions around a perimeter of the brush core.

14. The brush and brush core of claim 12, wherein the respective bands do not extend the entire length of the brush core.

15. The brush and brush core of claim 1, wherein a plurality of brush engagement members interrupt the outer surface of the one-piece body section, each brush engagement member extending along a portion of the length of the one-piece body section such that each brush engagement member does not extend along the entire length of the one-piece body section.

16. The brush and brush core of claim 1, wherein the plurality of brush engagement members interrupt the edges of the one-piece body section.

17. The brush and brush core of claim 1, wherein the plurality of brush engagement members interrupt the sides of the one-piece body section.

18. The brush and brush core of claim 1, wherein the hollow bore of the brush has a circular contour.