CLAIMS

1. An apparatus for shaping an edge of an aerofoil, the apparatus comprising a brush, the brush comprising a plurality of bristles extending substantially parallel to each other, a device arranged to rotate the brush about an axis, the axis being arranged substantially parallel to the bristles of the brush, a support structure arranged to hold the brush such that the axis intersects a first surface of an edge of an aerofoil, means to move the brush such that the brush contacts the first surface of the edge, means to produce relative movement between the brush and the aerofoil such that the brush moves longitudinally along the first surface of the edge of the aerofoil to shape the edge of the aerofoil.

2. An apparatus as claimed in claim 1 wherein the support structure is arranged to hold the brush such that the axis intersects the first surface at angle in the range of 30° to 75°.

3. An apparatus as claimed in claim 2 wherein the support structure is arranged to hold the brush such that the axis intersects the first surface at angle in the range of 30° to 75°.

4. An apparatus as claimed in any of claims 1 to 3 wherein the support structure comprises an adjuster to vary the angle at which the axis of the brush intersects the first surface.

5. An apparatus as claimed in any of claims 1 to 4 wherein the brush comprises alumina bristles or silicon carbide bristles.

6. An apparatus as claimed in any of claims 1 to 5 wherein the device comprises an electric motor, a hydraulic motor or a pneumatic motor.

7. A method of shaping an edge of an aerofoil, the method comprising a) providing a brush, the brush comprising a plurality of bristles extending substantially parallel to each other, b) rotating the brush about an axis, the axis being arranged substantially parallel to bristles of the brush, c) arranging the axis to intersect a first surface of an edge of an aerofoil, d) moving the brush such that the brush contacts the first surface of the edge, e) producing relative movement between the brush and the aerofoil such that the brush moves

longitudinally along the first surface of the edge of the aerofoil to shape the edge of the aerofoil.

8. A method as claimed in claim 7 comprising f) arranging the axis to intersect a second surface of the edge of the aerofoil, g) moving the brush such that the brush contacts the second surface of the edge, h) producing relative movement between the brush and the aerofoil such that the brush moves longitudinally along the second surface of the edge of the aerofoil to shape the edge of the aerofoil.

9. A method as claimed in claim 7 or claim 8 comprising arranging the axis to intersect the surface at angle in the range of 30° to 75°.

10. A method as claimed in claim 9 comprising arranging the axis to intersect the surface at angle in the range of 55° to 75°.

11. A method as claimed in any of claims 7 to 10 comprising varying the angle at which the axis intersect the surface.

12. A method as claimed in any of claims 7 to 11 wherein the brush comprises alumina bristles or silicon carbide bristles.

13. A method as claimed in any of claims 7 to 12 comprising shaping the edge of a gas turbine engine aerofoil.

14. A method as claimed in claim 13 comprising shaping the edge of a fan blade or a compressor blade.

15. A method as claimed in any of claims 7 to 14 comprising shaping a leading edge of an aerofoil.

16. A method as claimed in any of claims 7 to 15 comprising reshaping an edge of a worn aerofoil.

17. A method as claimed in claim 13 comprising shaping the edge of the aerofoil while the aerofoil is in the gas turbine engine.

18. A method as claimed in any of claims 7 to 17 wherein the aerofoil is an aerofoil of integrally bladed disc or a separate aerofoil mounted in a slot in the periphery of a disc or in a slot in the periphery of a drum.

CLAIMS

1. An apparatus for shaping an edge of an aerofoil, the apparatus comprising a single brush, the brush comprising a plurality of bristles extending substantially parallel to each other, a device arranged to rotate the brush about an axis, the axis being arranged substantially parallel to the bristles of the brush, a support structure arranged to hold the brush such that the axis intersects a first surface of an edge of an aerofoil, means to move the brush such that the brush contacts the first surface of the edge, means to produce relative movement between the brush and the aerofoil such that the brush moves longitudinally along the first surface of the edge of the aerofoil to shape the edge of the aerofoil.

2. An apparatus as claimed in claim 1 wherein the support structure is arranged to hold the brush such that the axis intersects the first surface at angle in the range of 30° to 75°.

3. An apparatus as claimed in claim 2 wherein the support structure is arranged to hold the brush such that the axis intersects the first surface at angle in the range of 55° to 75°.

4. An apparatus as claimed in any of claims 1 to 3 wherein the support structure comprises an adjuster to vary the angle at which the axis of the brush intersects the first surface.

5. An apparatus as claimed in any of claims 1 to 4 wherein the brush comprises alumina bristles or silicon carbide bristles.

6. An apparatus as claimed in any of claims 1 to 5 wherein the device comprises an electric motor, a hydraulic motor or a pneumatic motor.

7. A method of shaping an edge of an aerofoil, the method comprising a) providing a single brush, the brush comprising a plurality of bristles extending substantially parallel to each other, b) rotating the brush about an axis, the axis being arranged substantially parallel to bristles of the brush, c) arranging the axis to intersect a first surface of an edge of an aerofoil, d) moving the brush such that the brush contacts the first surface of the edge, e) producing relative movement between the brush and the aerofoil such that the brush moves longitudinally along the first surface of the edge of the aerofoil to shape the edge of the aerofoil.

8. A method as claimed in claim 7 comprising f) arranging the axis to intersect a second surface of the edge of the aerofoil, g) moving the brush such that the brush contacts the second surface of the edge, h) producing relative movement between the brush and the aerofoil such that the brush moves longitudinally along the second surface of the edge of the aerofoil to shape the edge of the aerofoil.

9. A method as claimed in claim 7 or claim 8 comprising arranging the axis to intersect the surface at angle in the range of 30° to 75°.

10. A method as claimed in claim 9 comprising arranging the axis to intersect the surface at angle in the range of 55° to 75°.

11. A method as claimed in any of claims 7 to 10 comprising varying the angle at which the axis intersects the surface.

12. A method as claimed in any of claims 7 to 11 wherein the brush comprises alumina bristles or silicon carbide bristles.

13. A method as claimed in any of claims 7 to 12 comprising shaping the edge of a gas turbine engine aerofoil.

14. A method as claimed in claim 13 comprising shaping the edge of a fan blade or a compressor blade.

15. A method as claimed in any of claims 7 to 14 comprising shaping a leading edge of an aerofoil.

16. A method as claimed in any of claims 7 to 15 comprising reshaping an edge of a worn aerofoil.

17. A method as claimed in any of claims 7 to 16 comprising shaping the edge of the aerofoil while the aerofoil is in the gas turbine engine.

18. A method as claimed in any of claims 7 to 17 wherein the aerofoil is an aerofoil of integrally bladed disc or a separate aerofoil mounted in a slot in the periphery of a disc or in a slot in the periphery of a drum.