CLAIMS

What is claimed is:

1. A safety razor comprising:
   a. a handle (200), said handle comprising a grip portion (250) and a connection portion (210), said connection portion rotating with respect to said grip portion about a rotational axis (280), said connection portion (210) forming a docking portion (218) suitable for receiving an optional blade unit (100), said docking portion (218) being positioned opposite distally away from said grip portion (250),
   b. wherein the grip portion and the connection portion are connected by a single rod (400) comprising a metal material, said rod comprising a distal end (450) non-rotatably attached to the grip portion (250) and a proximal end (410) non-rotatably attached to the connection portion (210), wherein said rotational axis (280) forms a central longitudinal axis of said rod (480).

2. The safety razor of claim 1, wherein the metal material is stainless steel.

3. The safety razor of claim 1 or 2, wherein the metal material is selected from the group steel, stainless steel, X5CrNi18 10 / X5CrNi18 8 (1.4301), X5CrNiMo17 13 3 / X3CrNiMo17 13 3 (1.4436), X5CrNiMo171 12 2 (1.4401), X1NiCrMoCuN25 20 5 (1.4539), X7CrNiAl17 7 (1.4568), X6CrNiMoTi17 12 2 (1.4571), CuZn37 (CW508L; 2.0321), CuZn36 (CW507L; 2.0335), CuSn6 (CW452K; 2.1020), CuBe 2 (CW101C; 2.1247), NiMo16Cr16Ti (2.,4610), NiCr15Fe7TiAI (2.4669), NiCr20Co18Ti (2.4632), Duratherm CoNiCrFe, VDC Oil tempered valve spring (1.1250; EN 10270-2), VDCrV Oil tempered valve spring (1.1250; EN 10270-2), VDSiCr Oil tempered valve spring (1.1250; EN 10270-2), and composites or laminates thereof.

4. The safety razor of any preceding claim, wherein the rod is permanently attached to at least one of said grip portion and said connection portion.

5. The safety razor of any preceding claim, wherein the end of the rod which is not permanently attached is removably attached to the other of said grip portion and said connection portion.

6. The safety razor of any preceding claim, wherein the rod is removably attached to both of said grip portion and said connection portion.

7. The safety razor of any preceding claim, wherein the rod further comprises a polymeric material, preferably wherein said polymeric material is selected from the group consisting of: an acetal, a polyacetal, a polyoxymethylene, polyphenylene sulfide, a polyamide, a polybutylene terephthalate, a thermoplastic elastomer, a polyurethane, a silicone, a nitrile rubber, and a mixture thereof.

8. The safety razor of any preceding claim, wherein said rod comprises a material having a Young's modulus of from about 0.01 GPa to about 200 GPa, preferably from about 0.01 GPa to about 10 GPa.

9. The safety razor of any preceding claim, wherein rotating said connection portion from a zero position by 15° generates from about 15 Nmm to about 40 Nmm of torque, preferably from about 22 Nmm to about 35 Nmm.

10. The safety razor of any preceding claim, wherein the blade unit pivots with respect to the connection member about a pivot axis (180) substantially parallel to the at least one blade.

11. The safety razor of any preceding claim, wherein said blade unit (100) comprises a guard (140), a cap (150), at least one blade (110) positioned between the guard and the cap and a transverse centerline (185) extending through the guard and the cap in a direction substantially perpendicular to the at least one blade.

12. The safety razor of any preceding claim, wherein the rotational axis (280) intersects at least one of said pivot axis and said transverse centerline (185) of the blade unit, preferably the transverse centerline.

13. The safety razor of any preceding claim, wherein said blade unit has a maximum rotation of about 15°.

14. The safety razor of any preceding claim, wherein the rod has a thickness of from about 0.1 mm to about 0.5 mm, preferably from about 0.2 mm to about 0.4 mm, preferably from about 0.30 mm to about 0.35 mm.

15. The safety razor of any preceding claim, wherein the rod has a length of from about 2 mm to about 4.5 mm, preferably from about 2.5 mm to about 4 mm, preferably from about 3 mm to about 3.8 mm.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A safety razor comprising:

a. a blade unit;

b. a handle comprising a grip portion and a connection portion, said connection portion rotating with respect to said grip portion about a rotational axis, said connection portion forming a docking portion attachable to said blade unit, said docking portion being positioned opposite distally away from said grip portion,

c. wherein the grip portion and the connection portion are connected by a single rod comprising a galvanized metal material, said rod being in the shape of an elongated rectangle with a thickness of from about 0.1 mm to about 0.5 mm and a length of from about 2 mm to about 4.5mm, said rod comprising a distal end non-rotatably attached to the grip portion and a proximal end non-rotatably attached to the connection portion, wherein said rotational axis forms a central longitudinal axis of said rod,

d. wherein the handle comprises a finger pad, said finger pad having a pressure point, said pressure point being positioned over a portion of the rod,

e. wherein said handle has a rotation range up to about 30°, about 15° in one direction and about 15°in the opposite direction.

2. The safety razor of claim 1, wherein the metal material is stainless steel.

3. The safety razor of claim 2, wherein the metal material is ¾ hardened stainless steel.

4. The safety razor of claim 1, wherein the metal material is selected from the group consisting of steel, stainless steel, X5CrNi18 10 / X5CrNi18 8 (1.4301), X5CrNiMo17 13 3 / X3CrNiMo17 13 3 (1.4436), X5CrNiMo171 12 2 (1.4401), X1NiCrMoCuN25 20 5 (1.4539), X7CrNiAl17 7 (1.4568), X6CrNiMoTi17 12 2 (1.4571), CuZn37 (CW508L; 2.0321), CuZn36 (CW507L; 2.0335), CuSn6 (CW452K; 2.1020), CuBe 2 (CW101C; 2.1247), NiMo16Cr16Ti (2.,4610), NiCr15Fe7TiAI (2.4669), NiCr20Co18Ti (2.4632), and CoNiCrFe.

5. The safety razor of any one of claims 1 to 4, wherein the rod is permanently attached to at least one of said grip portion and said connection portion.

6. The safety razor of claim 5, wherein the end of the rod which is not permanently attached is removably attached to the other of said grip portion and said connection portion.

7. The safety razor of any one of claims 1 to 6, wherein the rod further comprises a polymeric material.

8. The safety razor of claim 7, wherein said polymeric material is selected from the group consisting of: an acetal, a polyacetal, a polyoxymethylene, polyphenylene sulfide, a polyamide, a polybutylene terephthalate, a thermoplastic elastomer, a polyurethane, a silicone, a nitrile rubber, and a mixture thereof.

9. The safety razor of any one of claims 1 to 8, wherein said rod comprises a first layer laminated with a second layer.

10. The safety razor of any one of claims 1 to 9, wherein said rod comprises a material having a Young's modulus of from about 0.01 GPa to about 10 GPa.

11. The safety razor of any one of claims 1 to 10, wherein rotating said connection portion from a zero position by 15° generates from about 15 Nmm to about 40 Nmm of torque.

12. The safety razor of any one of claims 1 to 11, wherein said rod comprises a body between said distal and proximal ends, and wherein said body is not a cylinder.

13. The safety razor of any one of claims 1 to 12, wherein the blade unit pivots with respect to the connection member about a pivot axis substantially parallel to the at least one blade.

14. The safety razor of any one of claims 1 to 13, wherein said blade unit comprises a guard, a cap, at least one blade positioned between the guard and the cap and a transverse centerline extending through the guard and the cap in a direction perpendicular to the at least one blade.

15. The safety razor of claim 14, wherein the rotational axis intersects at least one of said pivot axis and said transverse centerline of the blade unit.

16. The safety razor of any one of claims 1 to 15, wherein said blade unit has a maximum rotation of about 15°.

17. The safety razor of any one of claims 1 to 16, wherein the rod is selected from the group consisting of 301 stainless steel ¾ hardened with a thickness of about 0.30 mm and a length of about 3.8 mm, or a 301 stainless steel ¾ hardened with a thickness of about 0.35 mm and a length of about 3.0 mm, wherein said single rod is contained within the handle and said finger pad is positioned directly above the rod and the rotational axis.