joint comprising:

a first member;

a second member moveably connected to the first member;

a shape-memory-alloy member connected to the first member and engageable with the second member, the shape-memory-alloy member being configured to change shape when heated; and

a biasing means configured to bias the second member from a first position relative to the first member towards a second position relative to the first member;

wherein movement of the second member between the first position and the second position is limited by the shape-memory-alloy member such that the position of the second member relative to the first member is determined by the shape of the shape-memory-alloy member; and

wherein the shape-memory-alloy member is deformable from its original shape such that when the shape-memory-alloy member is in a deformed shape, the second member is in the first position relative to the first member, and when the shape-memory-alloy member is in its original shape, the second member is in the second position relative to the first member, and when the shape-memory-alloy member is in its original shape, the second member is moveable relative to the shape-memory-alloy member.

**[0007]** In certain embodiments, intermediate of the first position and the second position, the position of the second member relative to the first member may be determined by the shape of the shape-memory-alloy member.

**[0008]** In certain embodiments, the second member may be rotatable about the first member. In some embodiments, the second member may be hingedly connected to the first member. The second member may comprise a shaft receivable by the first member such that the second member is hingedly rotatable relative to the first member. The first member may comprise one or more v-shaped grooves configured to receive the shaft of the second member. The v-shaped grooves may be at opposing ends of the first member.

**[0009]** In certain embodiments, the first member may be configured to adjust the position of the second member. The first member may comprise a flexible material such that the shape of the first member is adjustable.

**[0010]** In certain embodiments, opposing ends of the first member may be moveable relative to a centre of the first member such that the v-shaped groove at opposing ends of the first member is configured to adjust the position of the second member relative to the centre of the first member.

**[0011]** In certain embodiments, the shape-memory-alloy member may be deformable from its original shape such that when the shape-memory-alloy member is in a deformed shape, the second member is in the first position relative to the first member, and when the shape-memory-alloy member is in its original shape, the second member is in the second position relative to the first member. When the shape-memory-alloy member is in its original shape, the

**CLAIMS**

1. A moveable joint comprising:

a first member;

a second member moveably connected to the first member;

a shape-memory-alloy member connected to the first member and engageable with the second member, the shape-memory-alloy member being configured to change shape when heated; and

a biasing means configured to bias the second member from a first position relative to the first member towards a second position relative to the first member;

wherein movement of the second member between the first position and the second position is limited by the shape-memory-alloy member such that the position of the second member relative to the first member is determined by the shape of the shape-memory-alloy member; and

wherein the shape-memory-alloy member is deformable from its original shape such that when the shape-memory-alloy member is in a deformed shape, the second member is in the first position relative to the first member, and when the shape-memory-alloy member is in its original shape, the second member is in the second position relative to the first member, and when the shape-memory-alloy member is in its original shape, the second member is moveable relative to the shape-memory-alloy member.

2. A moveable joint according to claim 1, wherein, intermediate of the first position and the second position, the position of the second member relative to the first member is determined by the shape of the shape-memory-alloy member.

3. A moveable joint according to claim 1 or 2, wherein the second member is rotatable about the first member.

4. A moveable joint according to claim 3, wherein the second member is hingedly connected to the first member.

5. A moveable joint according to claim 4, wherein the second member comprises a shaft receivable by the first member such that the second member is hingedly rotatable relative to the first member.

6. A moveable joint according to claim 5, wherein the first member comprises one or more v-shaped grooves configured to receive the shaft of the second member.

7. A moveable joint according to claim 6, wherein the first member comprises a v-shaped groove at opposing ends of the first member configured to receive the shaft of the second member.

8. A moveable joint according to any preceding claim, wherein the first member is configured to adjust the position of the second member.

9. A moveable joint according to any preceding claim, wherein the first member comprises a flexible material such that the shape of the first member is adjustable.

10. A moveable joint according to claim 9 when dependent on claim 7, wherein opposing ends of the first member are moveable relative to a centre of the first member such that the v-shaped groove at opposing ends of the first member is configured to adjust the position of the second member relative to the centre of the first member.

11. A moveable joint according to any preceding claim, further comprising a heating means configured to heat the shape-memory-alloy member such to change its shape.

12. A moveable joint according to claim 11, wherein the heating means extends substantially along the length of the shape-memory-alloy member.

13. A moveable joint according to claim 11 or 12, wherein the heating means comprises a wire.

14. A moveable joint according to claim 13, wherein the heating means comprises a constantan wire.

15. A moveable joint according to any preceding claim, wherein the biasing means comprises a spring.

16. A moveable joint according to claim 15, wherein the biasing means comprises a torsion spring.

17. A moveable joint according to any preceding claim, wherein the shape-memory-alloy member comprises a one-way shape-memory-alloy.

18. A moveable joint according to any preceding claim, wherein the shape-memory-alloy member comprises nitinol.

19. A satellite comprising a moveable joint according to any preceding claim.

20. A satellite according to claim 19, wherein the second member of the moveable joint comprises a mirror.