Claims

1. A rope chain comprising:

a double helix structure comprising a first plurality of links intertwined with a second plurality of links to form a plurality of grooves;

wherein both the first plurality of links and the second plurality of links comprise at least one facet;

wherein each facet is located directly adjacent to one of the plurality of grooves~~,~~ ~~and~~

~~wherein reflected light shining from each facet is aligned substantially along a longitudinal centre of the rope chain and in a diagonal direction relative to the longitudinal centre and directed towards the plurality of grooves when rotated along the longitudinal centre~~.

2. The rope chain according to claim 1, wherein the double helix structure has a substantially curved peripheral surface.

3. The rope chain according to claim 2, wherein the substantially curved peripheral surface comprises a portion of the first plurality of links that does not have a facet and a portion of the second plurality of links that does not have a facet.

4. The rope chain according to claim 1, wherein the at least one facet on the first plurality of links are on a different plane from the at least one facet on the second plurality of links.

5. The rope chain according to claim 1 or 4, wherein the at least one facet on the first plurality of links and the at least one facet on the second plurality of links are facing inwards and towards the longitudinal centre of the rope chain.

6. The rope chain according to claim 5, wherein the at least one facet on the first plurality of links and the at least one facet on the second plurality of links are at an angle of about 35 degrees from the longitudinal centre of the rope chain.

7. The rope chain according to any one of the preceding claims, wherein the at least one facet on the first plurality of links and the at least one facet on the second plurality of links is bigger on one side and smaller on the other side of the groove.

8. The rope chain according to any one of the preceding claims, wherein the first plurality of links is made up of a hollow wire or a solid wire.

9. The rope chain according to claim 8, wherein the second plurality of links is made up of a hollow wire or a solid wire.

10. The rope chain according to any one of the preceding claims, wherein the first plurality of links and the second plurality of links have a substantially circular cross-section.

11. The rope chain according to any one of the preceding claims, wherein each facet directly adjacent to the plurality of grooves has a uniform surface area.

12. The rope chain according to any one of the preceding claims, further comprising an engaging means capable of attaching a first end of the double helix structure to a second end of the double helix structure.

13. The rope chain according to claim 12, wherein the engaging means is a clasp.

14. A method of manufacturing a rope chain, comprising:

providing a double helix structure comprising a first plurality of links intertwined with a second plurality of links to form a plurality of grooves;

creating at least one facet on <u>both</u> the first plurality of links and ~~on~~ the second plurality of links;

wherein each facet is located directly adjacent to <u>one of</u> the plurality of grooves~~,~~

~~and~~

~~wherein reflected light shining from each facet is aligned substantially along a longitudinal centre of the rope chain and in a diagonal direction relative~~

~~to the longitudinal centre and directed towards the plurality of grooves when rotated along the longitudinal centre~~.

15. The method of claim 14, wherein the step of creating the at least one facet on the first plurality of links and/or the second plurality of links makes use of a faceting structure capable of holding and mounting the rope chain.

~~16. A faceting structure for creating at least one facet on a plurality of links, wherein the faceting structure is capable of being used in a method of claim 15.~~

~~17. The faceting structure of claim 16, wherein the faceting structure comprises two bobbins arranged in a vertical direction such that one bobbin is positioned directly above the other bobbin.~~

~~18. The faceting structure of claim 17, wherein the faceting structure further comprises air cylinder holders comprising clamps, wherein the air cylinder holders are connected adjacently to the bobbins.~~

~~19. The faceting structure of any one of claims 16 to 18, wherein the faceting structure further comprises a diamond cutting tool holder comprising a single point diamond cutting tool.~~

~~20. The faceting structure of claim 19, wherein the single point diamond tool comprises a diamond tip and a carbide shank attached to the diamond tip.~~

~~21. The faceting structure of claim 19, wherein the diamond cutting tool holder further comprises a sliding means capable of controlling the movement of the single point diamond cutting tool.~~

~~22. The faceting structure of any one of claims 19 to 21, wherein the faceting structure further comprises sensors disposed at one end of the faceting structure, wherein the sensors are capable of positioning the single point diamond cutting tool.~~

~~23. The faceting structure of any one of claims 19 to 22, wherein the faceting structure further comprises at least one or more motors, wherein the at least~~

~~one or more motors is selected from the group comprising of a hollow shaft motor, a linear drive stepper motor and a motor capable of rotating the single point diamond cutting tool.~~

~~24. The faceting structure of claim 23, wherein each motor comprises a built-in encoder capable of detecting a length of a rope chain.~~

~~25. The faceting structure of any one of claims 19 to 24, wherein the faceting structure further comprises a motorized stage, wherein the diamond cutting tool holder is mounted on the motorized stage.~~

~~26. The faceting structure of claim 25, wherein the sensors are connected to the motorized stage via an arm.~~