CLAIMS

1. A fastener comprising:

a shaft having a cross-sectional profile having an entrance point at a first end and a head at a second end, wherein the cross-sectional profile has here or more lobes

wherein the shaft has inscribed thereon a first thread profile in a first zone and a second zone, wherein the first thread profile is a thread forming thread profile designed to generate internal threads in a nut member;

wherein the first zone begins at the entrance point and extends for approximately a first predefined number of thread pitches along the shaft, wherein a diameter of the first zone increases from the entrance point to the second zone;

wherein a second zone has a constant outer diameter and extends for approximately a second number of predefined thread pitches, and

a third zone having a second thread profile differing from the first thread profile extending from a transition from the second zone along a substantial portion of the remainder of the shaft towards a bottom of the head, wherein the second thread profile is a thread locking thread profile and wherein the second thread profile is sized based on knowledge of the first thread profile to create a desired amount of mechanical interference between the internal threads formed by the first thread profile and the second thread profile.

2. The fastener of claim 1, wherein the first thread profile has an approximately 60° angle.

3. The fastener of claim 1, wherein the first thread profile as an approximately radius thread profile.

4. The fastener of claim 1, wherein the first thread profile as an approximately parabolic thread profile.

5. The fastener of claim 1, wherein the cross-sectional profile is substantially circular.

~~6. The fastener of claim 1, wherein the cross-sectional profile has three or more~~

~~lobes.~~

~~7. The fastener of claim 1, wherein a cross-sectional profile of the shaft transitions from a substantially circular cross section to a substantially non-circular cross section.~~

~~8. The fastener of claim 1, wherein a cross-sectional profile of the shaft transitions from a substantially non-circular cross section to a substantially circular cross section.~~

~~9~~6. The fastener of claim 1, wherein the first predefined number of thread pitches is three.

~~10~~7. The fastener of claim 1 wherein the second predefined number of thread pitches is six.

~~11~~8. The fastener of claim 1 wherein the first thread profile is a thread forming thread profile.

~~12~~9. The fastener of claim 1 wherein the second thread profile is a thread locking thread profile.

~~13~~10. The fastener of claim 1, wherein the first thread profile is sized to create an optimized internal thread for engagement with the second thread profile.

11. A fastener comprising:

a shaft having a cross-sectional profile having an entrance point at a first end and a head at a second end, wherein the cross-sectional profile of the shaft transitions from a substantially circular cross section to a substantially non-circular cross section;

wherein the shaft has inscribed thereon a first thread profile in a first zone and a second zone, wherein the first thread profile is a thread forming thread profile designed to generate internal threads in a nut member;

wherein the first zone begins at the entrance point and extends for approximately a first predefined number of thread pitches along the shaft, wherein a diameter of the

first zone increases from the entrance point to the second zone;

wherein the second zone has a constant outer diameter and extends for approximately a second number of predefined thread pitches, and

a third zone having a second thread profile differing from the first thread profile extending from a transition from the second zone along a substantial portion of the remainder of the shaft towards a bottom of the head, wherein the second thread profile is a thread locking thread profile and wherein the second thread profile is sized based on knowledge of the first thread profile to create a desired amount of mechanical interference between the internal threads formed by the first thread profile and the second thread profile.

12. A fastener comprising:

a shaft having a cross-sectional profile having an entrance point at a first end and a head at a second end, wherein the cross-sectional profile of the shaft transitions from a substantially non-circular cross section to a substantially circular cross section;

wherein the shaft has inscribed thereon a first thread profile in a first zone and a second zone, wherein the first thread profile is a thread forming thread profile designed to generate internal threads in a nut member;

wherein the first zone begins at the entrance point and extends for approximately a first predefined number of thread pitches along the shaft, wherein a diameter of the first zone increases from the entrance point to the second zone;

wherein the second zone has a constant outer diameter and extends for approximately a second number of predefined thread pitches, and

a third zone having a second thread profile differing from the first thread profile extending from a transition from the second zone along a substantial portion of the remainder of the shaft towards a bottom of the head, wherein the second thread profile is a thread locking thread profile and wherein the second thread profile is sized based on knowledge of the first thread profile to create a desired amount of mechanical interference between the internal threads formed by the first thread profile and the second thread profile.