CLAIMS

1. A fastener comprising:

a first fastener component having a first head portion, a first cylindrical body portion extending from the first head portion along a first cylindrical axis, a first thread formed on the first cylindrical body portion about the first cylindrical axis, the first thread having a first thread handedness;

a second fastener component having a second head portion, a second cylindrical body portion extending from the second head portion along a second cylindrical axis, a through hole formed through the second head portion and the second cylindrical body portion along the second cylindrical axis, a second thread formed on the second cylindrical body portion about the second cylindrical axis, the second thread having a second thread handedness opposite the first thread handedness, at least a part of the first cylindrical body portion of the first fastener component being positioned within the through hole such that the first threads are situated within the through hole and the first cylindrical axis is substantially coaxial with the second cylindrical axis to form an axis of rotation; and

a rotating joint that captures the part of the first cylindrical body portion of the first fastener component within the through hole of the second fastener component to prohibit axial movement between the first fastener component and the second fastener component along the axis of rotation and permits axial rotation between the first fastener component and the second fastener component about the axis of rotation;

wherein the first fastener component is configured to be rotated in a first rotational direction about the axis of rotation and simultaneously the second fastener component is configured to be rotated in a second rotational direction about the axis of rotation, the second rotational direction being opposite the first rotational direction.

2. The fastener of claim 1 wherein the first head portion of the first fastener component includes a first screw drive and the second head portion of the second fastener component includes a second screw drive.

3. The fastener of claim 2, wherein the first screw drive is configured to be engaged by a first driver portion of a screwdriver tool to rotate the first fastener component in the first rotational direction about the axis of rotation and the second screw drive is configured to be engaged by a second driver portion of the screwdriver tool to rotate the second fastener component in the first rotational direction about the axis of rotation.

4. The fastener of claim 2, wherein the first head portion is configured to be engaged by the first screw drive to rotate the first fastener component in the first rotational direction and the second head portion is configured to be engaged by the second screw drive to rotate the second fastener component in the second rotational direction.

5. The fastener of claim 4, wherein the first screw drive is configured to be engaged by a first driver portion of a screwdriver tool to rotate the first fastener component in the first rotational direction about the axis of rotation and the second screw drive is configured to be engaged by a second driver portion of the screwdriver tool to rotate the second fastener component in the second rotational direction about the axis of rotation.

6. The fastener of claim 5, wherein the first fastener component is configured to be rotated at a first rotational speed in the first rotational direction by a first torque applied by the first driver portion of the screwdriver tool; the second fastener component is configured to be rotated at a second rotational speed in the second rotational direction by a second torque applied by the second driver portion of the screwdriver tool, wherein the first driver portion of the screwdriver tool is coupled to the second driver portion of the screwdriver tool through a gear train such that a single torque input provides the first torque and the second torque.

7. The fastener of claim 6, wherein the first and second fastener components had dissimilar thread pitches resulting in a first magnitude of the first rotational speed being different than a second magnitude of the second rotational speed.

8. The fastener of claim 6, wherein the first rotational speed of the first fastener component is configured to be different than a second rotational speed of the second fastener component when being simultaneously threaded to a mating component.

9. The fastener of claim 6, wherein a first lead distance of the first thread of the first fastener component is different than a second lead distance of the second thread of the second fastener component, and wherein the first rotational speed of the first fastener component is configured to be different than the second rotational speed of the second fastener component when being simultaneously threaded to a mating component, such that a first axial advance distance of the first fastener component is substantially equal to a second axial advance distance of the second fastener component.

10. The fastener of any one of claims 1-8, wherein a first lead distance of the first thread is the same as a second lead distance of the second thread.

11. The fastener of any one of claims 1-10 wherein the rotating joint comprises an annular flange having an edge portion inserted within an annular groove, permitting relative rotation between the annular flange and the annular groove.

12. The fastener of claim 11 wherein the annular flange is formed on an outer surface of the first fastener component and the annular groove is formed into a wall surface of the through hole of the second fastener component.

13. The fastener of claim 11, wherein the annular groove is formed into an outer surface of the first fastener component and the annular flange is formed on a wall surface of the through hole of the second fastener component.

14. The fastener of any one of claims 1-13, wherein the first thread is formed on an outer surface of the first fastener component and the second thread is formed on a wall surface of the through hole of the second fastener component.

15. The fastener of any one of claims 1-14, wherein the first thread is formed on an outer surface of the first fastener component and the second thread is formed on an outer wall surface of the second cylindrical body portion of the second fastener component.

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16. The fastener of any one of claims 1-3-15, wherein the first head portion of the first fastener component includes a first screw drive and the second head portion of the second fastener component includes a second screw drive, the first screw drive is configured to be engaged by a first driver portion of a screwdriver tool to rotate the first fastener component in the first rotational direction about the axis of rotation and the second screw drive is configured to be engaged by a second driver portion of the screwdriver tool to rotate the second fastener component in the second rotational direction about the axis of rotation, wherein the first driver portion of the screwdriver tool is coupled to the second driver portion of the screwdriver tool through a gear train such that a single torque input provides a first torque to the first screw drive and a second torque to the second screw drive.

17. The fastener of any one of claims 1-16, wherein a first lead distance of the first thread is the same as a second lead distance of the second thread.

18. The fastener of any one of claims 1-17, wherein an axial play distance between the first fastener component and the second fastener component is limited by the rotating joint to less than one fourth of a first thread pitch of the first thread, or less than one half of the first thread pitch of the first thread, or less than three fourths of the first thread pitch of the first thread, or less than one of the first thread pitch of the first thread.

19. A fastener comprising:

a first fastener component having a first cylindrical body portion extending along a first cylindrical axis and a first thread formed on an outer surface of the first cylindrical body portion;

a second fastener component having a second cylindrical body portion extending along a second cylindrical axis, a through hole formed through the second cylindrical body portion along the second cylindrical axis, a second thread formed on the second cylindrical body portion about the second cylindrical axis; and

a rotating joint that captures at least a part of the first cylindrical body portion of the first fastener component within the through hole of the second fastener component such that the first threads are situated within the through hole and the first cylindrical axis is substantially coaxial with the second cylindrical axis to form an axis of rotation, the rotating joint limits

substantial axial movement between the first fastener component and the second fastener component along the axis of rotation, the rotating joint permits axial rotation between the first fastener component and the second fastener component about the axis of rotation;

wherein an axial play distance between the first fastener component and the second fastener component is limited by the rotating joint to less than a first thread pitch of the first thread.

20. The fastener of claim 19, wherein the first thread is configured with a first thread handedness and the second thread is configured with a second thread handedness opposite the first thread handedness, the first fastener component is configured to be rotated in a first rotational direction about the axis of rotation and simultaneously the second fastener component is configured to be rotated in a second rotational direction about the axis of rotation, the second rotational direction being opposite the first rotational direction.

21. A method of driving a threaded fastener comprising:

providing a first threaded fastener positioned within an axial through hole of a second threaded fastener, the first threaded fastener being coupled to the second threaded fastener through a rotating joint configured to limit substantial axial movement between the first threaded fastener and the second threaded fastener along a common axis of rotation, the rotating joint configured to permit axial rotation between the first threaded fastener and the second threaded fastener about the common axis of rotation; and

applying, simultaneously, a first torque to the first threaded fastener configured to rotate the first threaded fastener in a first rotational direction about a common thread axis and a second torque to the second threaded fastener configured to rotate the second threaded fastener in a second rotational direction about the common thread axis, wherein the common thread axis is substantially colinear with the common axis of rotation.

22. The method of claim 21 further comprising: providing a screwdriver tool with a first driver portion and a second driver portion wherein the first driver portion of the screwdriver tool is coupled to the second driver portion of the screwdriver tool through a gear train such that a single torque input provides the first torque and the second torque, wherein the gear train is

configured to rotate the first driver portion in the first rotational direction and rotate the second driver portion in the second rotational direction opposite the first rotational direction.