CLAIMS:

1. A segmented bending system, comprising:

a plurality of linkages coupled to one another in a stacked arrangement along a first axis; and

a plurality of rotation assemblies coupled to one another to extend through the plurality of linkages, wherein each rotation assembly of the plurality of rotation assemblies comprises a ball joint and a cup that supports the ball joint , and a cam member that extends from the cup and into a respective opening formed in a respective laterally-extending bar of a corresponding linkage of the plurality of linkages; and

wherein the cup drives the cam member, to rotate about the first axis, so that the cam member slides within the opening and drives the plurality of linkages to bend relative to one another about a second axis.

2. The segmented bending system of claim 1, comprising a pin that is configured to engage the ball joint and the cup to block relative movement between the ball joint and the cup about the first axis.

3. The segmented bending system of claim 2, wherein the pin comprises a slot pin that is positioned within a slot of the ball of the ball joint and through a slot pin opening formed in a sidewall of the cup.

4. The segmented bending system of claim 3, wherein the slot is configured to enable the ball joint to rotate relative to the cup about a third axis that is perpendicular to the first axis.

5. The segmented bending system of claim 1, wherein each linkage of the plurality of linkages comprises the respective laterally-extending bar, a first bracket on a first lateral end of the laterally-extending bar, and a second bracket on a second lateral end of the laterally-extending bar.

6. The segmented bending system of claim 1, wherein the plurality of linkages is coupled to one another in the stacked arrangement via fasteners that couple brackets of adjacent linkages of

the plurality of linkages to one another.

7. The segmented bending system of claim 1, wherein, in response to rotation of a first rotation assembly of the plurality of rotation assemblies about the first axis of the plurality of rotation assemblies, the plurality of rotation assemblies rotate to drive the linkages to bend relative to one another.

8. The segmented bending system of claim 1, wherein at least one linkage of the plurality of linkages is offset from at least one other linkage of the plurality of linkages about the first axis and a corresponding cam member of the plurality of cam members is offset from at least one other corresponding cam member of the plurality of cam members about the first axis such that the at least one linkage can bend with respect to the at least one other linkage about a fourth axis perpendicular to the first axis.

9. A segmented bending system, comprising:

a first segment comprising a first linkage and a first rotation assembly; and

a second segment comprising a second linkage coupled to the first linkage and a second rotation assembly coupled to the first rotation assembly;

wherein the first rotation assembly comprises a first cam member that is configured to engage a first opening in the first linkage to drive the first linkage to bend in response to rotation of the first rotation assembly in a circumferential direction, and the second rotation assembly comprises a second cam member that is configured to engage a second opening in the second linkage to drive the second linkage to bend in response to rotation of the first rotation assembly in the circumferential direction.

10. The segmented bending system of claim 9, wherein the first rotation assembly comprises a first ball joint and a first cup that supports the first ball joint, and the first cam member extends outwardly from the first cup.

11. The segmented bending system of claim 10, comprising a slot pin that is configured to engage the first ball joint and the first cup to block relative movement between the first ball joint and the first cup in the circumferential direction.

12. The segmented bending system of claim 10, wherein the second rotation assembly comprises a second ball joint and a second cup that supports the second ball joint, and the second cam member extends outwardly from the cup.

13. The segmented bending system of claim 12, comprising a pin that is configured to engage the first ball joint and the second cup to block relative movement between the first ball joint and the second cup in the circumferential direction.

14. A segmented bending system, comprising:

a first linkage and a first rotation assembly, wherein the first rotation assembly comprises a first ball joint, a first cup that supports the first ball joint, and a first cam member that extends from the first cup and into a first opening formed in a first bar of the first linkage;

a second linkage and a second rotation assembly, wherein the second rotation assembly comprises a second ball joint, a second cup that supports the second ball joint, and a second cam member that extends from the second cup and into a second opening formed in a second bar of the second linkage, and the second opening is offset from the first opening relative to a circumferential direction about an axis of the segmented bending system; and

a drive system configured to drive rotation of the first rotation assembly in the circumferential direction to cause the first linkage and the first rotation assembly to bend in a first bending direction and to cause the second linkage and the second rotation assembly to bend in a second bending direction different from the first bending direction.

15. The segmented bending system of claim 14, wherein the first rotation assembly and the second rotation assembly are coupled to one another via a pin that blocks relative movement of the first rotation assembly and the second rotation assembly in the circumferential direction.

16. The segmented bending system of claim 15, wherein the first ball joint and the second cup are coupled to one another via the pin.

17. The segmented bending system of claim 14, wherein the first ball joint is configured to rotate within the first cup as the first rotation assembly rotates in the circumferential direction to cause the first linkage and the first rotation assembly to bend about the lateral axis.