What is claimed is:

1. A non-metallic vertebrae bend restrictor comprising:

    a first non-metallic member comprising

        a first half of a ball portion,

        a first half of a socket portion,

        a first half of a first non-metallic clip receiver,

        a first half of a second non-metallic clip receiver, and

        a first half of a cavity;

    a second non-metallic member comprising

        a second half of the ball portion,

        a second half of the socket portion,

        a second half of the first non-metallic clip receiver,

        a second half of the second non-metallic clip receiver, and

        a second half of the cavity;

    a first non-metallic clip; and

    a second non-metallic clip,

    wherein the first non-metallic member is secured to the second non-metallic member by a first interference fit between the first non-metallic clip and the first non-metallic clip receiver and a second interference fit between the second non-metallic clip and the second non-metallic clip receiver.

2. The non-metallic vertebrae bend restrictor of claim 1, further comprising:

    a plurality of non-metallic retention screws.

3. The non-metallic vertebrae bend restrictor of claim 1, wherein all edges other than a top face of each of the first non-metallic clip and the second non-metallic clip are beveled or radiused.

4. The non-metallic vertebrae bend restrictor of claim 1, wherein each of the first non-metallic clip and the second non-metallic clip comprise a substantially rectangular base portion, a first longitudinal flared wing portion, and a second longitudinal flared wing portion.

5. The non-metallic vertebrae bend restrictor of claim 4, wherein each of the first non-metallic clip and the second non-metallic clip further comprise a clip retention screw receiver on a side longitudinal face of the substantially rectangular base portion.

6. The non-metallic vertebrae bend restrictor of claim 4, wherein each of the first non-metallic clip and the second non-metallic clip further comprise a clip retention feature disposed on a rear face of the substantially rectangular base portion near a top face.

7. The non-metallic vertebrae bend restrictor of claim 1, wherein the first half of the cavity comprises a first half of a flared portion that extends from the first half of the socket portion to a bottom of the first non-metallic member and a first half of a flared portion that extends from the first half of the ball portion to a top of the first non-metallic member.

8. The non-metallic vertebrae bend restrictor of claim 1, wherein the first non-metallic member further comprises:

    a first ball alignment and shear protrusion extending from an interior face of the first half of the ball portion; and

    a first ball alignment and shear protrusion receiver disposed in the interior face of the first half of the ball portion.

9. The non-metallic vertebrae bend restrictor of claim 1, wherein the second non-metallic member further comprises:

    a second ball alignment and shear protrusion extending from an interior face of the second half of the ball portion; and

    a second ball alignment and shear protrusion receiver disposed in the interior face of the second half of the ball portion.

10. The non-metallic vertebrae bend restrictor of claim 1, wherein the first non-metallic member further comprises:

    a first socket alignment and shear protrusion extending from an interior face of the first half of the socket portion; and

a first socket alignment and shear protrusion receiver disposed in the interior face of the first half of the socket portion.

11. The non-metallic vertebrae bend restrictor of claim 1, wherein the second non-metallic member further comprises:

a second socket alignment and shear protrusion extending from an interior face of the second half of the socket portion; and

a second socket alignment and shear protrusion receiver disposed in the interior face of the second half of the socket portion.

12. The non-metallic vertebrae bend restrictor of claim 1, wherein the first non-metallic member further comprises:

a first boss alignment and shear protrusion extending from an interior face of a first half of a boss portion; and

a first boss alignment and shear protrusion receiver disposed on the interior face of the first half of the boss portion.

13. The non-metallic vertebrae bend restrictor of claim 1, wherein the second non-metallic member further comprises:

a second boss alignment and shear protrusion extending from an interior face of a second half of a boss portion; and

a second boss alignment and shear protrusion receiver disposed in the interior face of the second half of the boss portion.

14. The non-metallic vertebrae bend restrictor of claim 1, wherein each of the first non-metallic member and the second non-metallic member are comprised of polyurethane, a non-metallic polymer, or a non-metallic material.

15. The non-metallic vertebrae bend restrictor of claim 1, wherein each of the first non-metallic clip and the second non-metallic clip are comprised of polyurethane, a non-metallic polymer, or a non-metallic material.

16. The non-metallic vertebrae bend restrictor of claim 1, wherein the ball portion of each of the first non-metallic member and the second non-metallic member comprise a half of a rib portion.

17. The non-metallic vertebrae bend restrictor of claim 1, wherein the socket portion of each of the first non-metallic member comprises a half of a rib receiver.

18. A non-metallic vertebrae end piece comprising:
    a first non-metallic member comprising
        a first half of a socket portion,
        a first half of a first non-metallic clip receiver,
        a first half of a second non-metallic clip receiver, and
        a first half of a cavity;
    a second non-metallic member comprising
        a second half of the socket portion,
        a second half of the first non-metallic clip receiver,
        a second half of the second non-metallic clip receiver, and
        a second half of the cavity;
    a first non-metallic clip; and
    a second non-metallic clip,
    wherein the first non-metallic member is secured to the second non-metallic member
        by a first interference fit between the first non-metallic clip and the first non-metallic clip receiver and a second interference fit between the second non-metallic clip and the second non-metallic clip receiver.

19. The non-metallic vertebrae end piece of claim 18, further comprising:
    a plurality of non-metallic retention screws.

20. The non-metallic vertebrae end piece of claim 18, wherein all edges other than a top face of each of the first non-metallic clip and the second non-metallic clip are beveled or radiused.

21. The non-metallic vertebrae end piece of claim 18, wherein each of the first non-metallic clip and the second non-metallic clip comprise a substantially rectangular base portion, a first longitudinal flared wing portion, and a second longitudinal flared wing portion.

22. The non-metallic vertebrae end piece of claim 21, wherein each of the first non-metallic clip and the second non-metallic clip further comprise a clip retention screw receiver on a side longitudinal face of the substantially rectangular base portion.

23. The non-metallic vertebrae end piece of claim 21, wherein each of the first non-metallic clip and the second non-metallic clip further comprise a clip retention feature disposed on a rear face of the substantially rectangular base portion near a top face.

24. The non-metallic vertebrae end piece of claim 18, wherein the first half of the cavity comprises a first half of a flared portion that extends from the first half of the socket portion to a bottom of the first non-metallic member and a first half of a flared portion that extends from the first half of the ball portion to a top of the first non-metallic member.

25. The non-metallic vertebrae end piece of claim 18, wherein the first non-metallic member further comprises:

a first socket alignment and shear protrusion extending from an interior face of the first half of the socket portion; and

a first socket alignment and shear protrusion receiver disposed in the interior face of the first half of the socket portion.

26. The non-metallic vertebrae end piece of claim 18, wherein the second non-metallic member further comprises:

a second socket alignment and shear protrusion extending from an interior face of the second half of the socket portion; and

a second socket alignment and shear protrusion receiver disposed in the interior face of the second half of the socket portion.

27. The non-metallic vertebrae end piece of claim 18, wherein the first non-metallic member further comprises:

a first boss alignment and shear protrusion extending from an interior face of a first half of a boss portion; and

a first boss alignment and shear protrusion receiver disposed on the interior face of the first half of the boss portion.

28. The non-metallic vertebrae end piece of claim 18, wherein the second non-metallic member further comprises:

a second boss alignment and shear protrusion extending from an interior face of a second half of a boss portion; and

a second boss alignment and shear protrusion receiver disposed in the interior face of the second half of the boss portion.

29. The non-metallic vertebrae end piece of claim 18, wherein each of the first non-metallic member and the second non-metallic member are comprised of polyurethane, a non-metallic polymer, or a non-metallic material.

30. The non-metallic vertebrae end piece of claim 18, wherein each of the first non-metallic clip and the second non-metallic clip are comprised of polyurethane, a non-metallic polymer, or a non-metallic material.

31. The non-metallic vertebrae end piece of claim 18, wherein the socket portion of each of the first non-metallic member comprises a half of a rib receiver.