We claim:

1. A differential dissecting instrument for differentially dissecting complex tissue comprising:

a handle;

an elongate member having a first end and a second end, the first end connected to the handle;

a differential dissecting member configured to be rotatably attached to the second end, the differential dissecting member comprising at least one tissue engaging surface;

a mechanism configured to mechanically rotate the differential dissecting member around an axis of rotation thereby causing the at least one tissue engaging surface to move in at least one direction against the complex tissue; and

wherein the at least one tissue engaging surface is configured to selectively engage the complex tissue such that when the differential dissecting member is pressed into the complex tissue, the at least one tissue engaging surface moves across the complex tissue and the at least one tissue engaging surface disrupts at least one soft tissue in the complex tissue, but does not disrupt firm tissue in the complex tissue.

2. The differential dissecting instrument of claim 1, wherein the tissue engaging surface further comprises projections that extend outward from the tissue engaging surface, wherein the projections are configured to sweep through any gel-like material that covers tightly packed, organized arrays of fibrous components that are part of the firm tissue, the projections further configured to snag and tear loosely packed fibrous components of the soft tissue, but to slip off of, and not snag, the tightly packed, organized arrays of fibrous components in the firm tissue.

3. The differential dissecting instrument of claim 3, wherein the projections have a projection length of less than approximately one (1) millimeter (mm).

4. The differential dissecting instrument of claim 3, wherein the projections have a projection length of less than approximately five (5) millimeters (mm).

5. The differential dissecting instrument of claim 1, wherein the differential dissecting member further comprises a three-dimensional surface having no sharp edges such that the differential dissecting member will not slice the complex tissue.

6. The differential dissecting instrument of claim 5, wherein the differential dissecting member has no edge having a radius of curvature smaller than approximately 0.05 millimeters (mm).

7. The differential dissecting instrument of claim 5, wherein the differential dissecting member has no edge having a radius of curvature smaller than approximately 0.025 millimeters (mm).

8. The differential dissecting instrument of claim 1, wherein the differential dissecting member further comprises at least one non-tissue engaging surface that can contact but does not engage the complex tissue such that the components of the complex tissue are not disrupted.

9. The differential dissecting instrument of claim 8, wherein the non-tissue engaging surface is smooth.

10. The differential dissecting instrument of claim 1, further comprising:

at least one additional surface disposed laterally to the tissue engaging surface, wherein the at least one additional surface is configured to wedge apart the complex tissue as the differential dissecting instrument is pressed into the complex tissue, thereby straining and aligning fibrous components of the at least one soft tissue perpendicular to the motion of the tissue engaging surface and thereby facilitating tearing of the fibrous components by the tissue engaging surface.

11. The differential dissecting instrument of claim 10, wherein the at least one additional surface comprises at least one surface on a shroud surrounding at least a portion of the differential dissecting member.

12. The differential dissecting instrument of claim 10, wherein the at least one additional surface comprises at least one non-tissue engaging surface on the differential dissecting member.

13. The differential dissecting instrument of claim 1, wherein the elongate member and the differential dissecting member are oriented with respect to each other such that the elongate member and the axis of rotation of the differential dissecting member form a presentation angle that is not zero, allowing the tissue engaging surface to be applied to a particular point on the complex tissue.

14. The differential dissecting instrument of claim 1, wherein the differential dissecting member is configured to oscillate at speeds ranging from approximately sixty (60) to approximately twenty thousand (20,000) cycles per minute.

15. The differential dissecting instrument of claim 1, wherein the differential dissecting member is configured to oscillate at speeds ranging from approximately two thousand (2,000) to approximately nine hundred thousand (900,000) cycles per minute.

16. The differential dissecting instrument of claim 1, wherein the differential dissecting member has a first end and a second end;

wherein the first end of the differential dissecting member is configured to be directed away from the complex tissue and is rotatably engaged with the mechanism such that the differential dissecting member and thus the second end of the differential dissecting member is rotated by the mechanism; and

wherein the second end of the differential dissecting member is configured to be directed toward the complex tissue, the second end of the differential dissecting member comprising a semi-ellipsoid shape defined by three orthogonal semi-axes, the three orthogonal semi-axes comprising a major semi-axis A, a first minor semi-axis B, and a second semi-minor axis C, wherein C is parallel to the axis of rotation.

17. The differential dissecting instrument of claim 16, wherein the major semi-axis A is longer than the first and second minor semi-axes (A>B and A>C).

18. The differential dissecting instrument of claim 16, wherein the major semi-axis A, the first minor semi-axes B, and the second minor semi-axis C all have different lengths ($A \neq B \neq C$).

19. The differential dissecting instrument of claim 1, wherein the differential dissecting member further comprises a tissue engaging surface distributed over at least a portion of the outer surface of the body and having:

a minimum placement radius, R_{min}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface closest to the axis of rotation,

a maximum placement radius, R_{max}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface furthest from the axis of rotation, and

the minimum placement radius, R_{min}, is greater than zero.

20. The differential dissecting instrument of claim 19, wherein the difference between the minimum placement radius, R_{min}, and the maximum placement radius, R_{max}, is equal to or greater than approximately 5% of R_{max}, i.e. $(R_{max} - R_{min}) \geq 0.05*R_{max}$.

21. The differential dissecting instrument of claim 19, wherein the difference between the minimum placement radius, R_{min}, and the maximum placement radius, R_{max}, is equal to or greater than an average length, P_{avg}, of the projections, i.e. $(R_{max} - R_{min}) \geq P_{avg}$.

22. The differential dissecting instrument of claim 19, wherein R_{max} is greater than approximately one (1) mm but less than approximately one hundred (100) mm.

23. The differential dissecting instrument of claim 19, wherein R_{max} is greater than approximately 0.5 mm but less than approximately five (5) mm.

24. A differential dissecting member for dissecting a complex tissue, the differential dissecting member comprising:

a body having a first end and a second end with a central axis from the first end to the second end;

wherein the first end is configured to be directed away from the complex tissue and configured to be engaged with a drive mechanism that moves the differential dissecting member such that the second end sweeps along a direction of motion, and

wherein the second end comprises a tissue-facing surface that is configured to be directed toward the complex tissue; and

wherein the tissue-facing surface comprises at least one tissue engaging surface comprised of an alternating series of at least one valley and at least one projection arrayed along the direction of motion on the tissue-facing surface such that the intersection of the at least one valley and at least one projection define at least one valley edge possessing a component of its direction perpendicular to the direction of motion.

25. The differential dissecting member of claim 24, wherein the at least one valley edge is not sharp.

26. The differential dissecting member of claim 24, wherein the drive mechanism further comprises a mechanism that rotates the differential dissecting member around an axis of rotation oriented perpendicular to the central axis of the differential dissecting member such that the direction of motion of the second end is an arc of motion.

27. The differential dissecting member of claim 26, wherein the rotation is a reciprocal (back-and-forth) oscillation.

28. The differential dissecting member of claim 26, wherein the rotation is between approximately sixty (60) and approximately twenty-five thousand (25,000) cycles per minute.

29. The differential dissecting member of claim 26, wherein the rotation is between approximately sixty (60) and approximately one million (1,000,000) cycles per minute.

30. The differential dissecting member of claim 24, wherein the at least one valley edge has a radius of curvature at no point being smaller than approximately 0.025 mm.

31. The differential dissecting member of claim 24, wherein the at least one valley edge has a radius of curvature at no point being smaller than approximately 0.05 mm.

32. The differential dissecting member of claim 24, wherein the at least one valley edge has a radius of curvature that varies along its length.

33. The differential dissecting member of claim 32, wherein the at least one valley edge is smallest at points furthest from the axis of rotation.

34. The differential dissecting member of claim 24, wherein the at least one projection further comprises a projection top formed by the tissue-facing surface spanning from a first valley edge on one side of the projection to a second valley edge on the opposing side of the projection.

35. The differential dissecting member of claim 24, wherein the at least one valley further comprises a valley bottom, a first valley wall abutting one side of the valley bottom, and a second valley wall abutting the opposing side of the valley bottom such that each valley wall joins a projection top at at least one valley edge.

36. The differential dissecting member of claim 35, wherein the valley walls are straight in the direction parallel to the axis of rotation.

37. The differential dissecting member of claim 35, wherein the valley wall is curved in three dimensions.

38. The differential dissecting member of claim 35, wherein the valley wall and the projection top form a face angle Γ that is less than ninety degrees (90°).

39. The differential dissecting member of claim 35, wherein the valley wall and the projection top form a face angle Γ that ranges from approximately thirty degrees (30°) to approximately one hundred fifty degrees (150°).

40. The differential dissecting member of claim 24, wherein the at least one valley edge traces a three-dimensional curve.

41. The differential dissecting member of claim 40, wherein the three-dimensional curve smoothly varies along its length.

42. The differential dissecting member of claim 24, wherein the at least one valley has a maximum depth of between approximately 0.1 mm to approximately five (5) mm.

43. The differential dissecting member of claim 24, wherein the at least one valley has a maximum width of between approximately 0.1 mm to approximately five (5) mm.

44. The differential dissecting member of claim 24, wherein the at least one valley has a minimum length of approximately 0.25 mm.

45. The differential dissecting member of claim 24, wherein the at least one valley comprises two or more valleys.

46. The differential dissecting member of claim 45, wherein the two or more valleys are approximately parallel to each other.

47. The differential dissecting member of claim 45, wherein a length of the at least one valley spans a full width of the differential dissecting member in the direction perpendicular to the direction of motion.

48. The differential dissecting member of claim 24, the at least one valley is comprised of multiple, intersecting valleys.

49. The differential dissecting member of claim 24, wherein the tissue-facing surface comprises a semi-ellipsoid shape defined by three orthogonal semi-axes, the three orthogonal semi-axes comprising a major semi-axis A, a first minor semi-axis B, and a second minor semi-axis C, wherein C is parallel to the axis of rotation.

50. The differential dissecting member of claim 49, wherein the major semi-axis A, the first minor semi-axis B, and the second minor semi-axis C all have different lengths ($A \neq B \neq C$).

51. The differential dissecting member of claim 49, wherein the major semi-axis A is longer than the first minor semi-axis B and the second minor semi-axis C ($A > B$ and $A > C$).

52. The differential dissecting member of claim 49, wherein the major semi-axis A is longer than first minor semi-axis B, which is longer than the second minor semi-axis C ($A > B > C$), and the second minor semi-axis C is parallel to the direction of motion.

53. The differential dissecting member of claim 24, wherein the differential dissecting member further comprises at least one lateral surface disposed beside the tissue engaging surface.

54. The differential dissecting member of claim 53, wherein the at least one lateral surface is configured to exert a wedging force on the complex tissue when the differential dissecting member is pressed into the complex tissue.

55. The differential dissecting member of claim 53, wherein the at least one lateral surface comprises a first lateral surface disposed on one side of the tissue engaging surface and a second lateral surface disposed on the opposing side of the tissue engaging surface, and wherein the first and second lateral surfaces are configured to exert a wedging force on the complex tissue when the differential dissecting member is pressed into the complex tissue.

56. The differential dissecting member of claim 55, wherein at least one valley spans from the first lateral surface to the second lateral surface and thus crosses an entirety of the tissue engaging surface.

57. The differential dissecting member of claim 24, wherein an entirety of the tissue contacting surface of the differential dissecting member is smooth and composed entirely of a material having a low friction with respect to the complex tissue.

58. The differential dissecting member of claim 24, wherein the tissue facing surface is lubricated.

Claims:

1. A differential dissecting instrument for differentially dissecting complex tissue comprising:

a handle;

an elongate member having a first end and a second end, the first end connected to the handle;

a differential dissecting member configured to be rotatably attached to the second end, the differential dissecting member comprising at least one tissue engaging surface;

a mechanism configured to mechanically rotate the differential dissecting member around an axis of rotation thereby causing the at least one tissue engaging surface to move in at least one direction against the complex tissue;

wherein the at least one tissue engaging surface is configured to selectively engage the complex tissue such that when the differential dissecting member is pressed into the complex tissue, the at least one tissue engaging surface moves across the complex tissue and the at least one tissue engaging surface disrupts at least one soft tissue in the complex tissue, but does not disrupt firm tissue in the complex tissue,

wherein the differential dissecting member has a first end and a second end;

wherein the first end of the differential dissecting member is configured to be directed away from the complex tissue and is rotatably engaged with the mechanism such that the differential dissecting member and thus the second end of the differential dissecting member is rotated by the mechanism; and

wherein the second end of the differential dissecting member is configured to be directed toward the complex tissue, the second end of the differential dissecting member comprising a semi-ellipsoid shape defined by three orthogonal semi-axes, the three orthogonal semi-axes comprising a major semi-axis A, a first minor semi-axis B, and a second semi-minor axis C, wherein the major semi-axis A is perpendicular to the axis of rotation, the second semi-minor axis C is parallel to the axis of rotation, and the first minor semi-axis B is perpendicular to both the major semi-axis A and the second semi-minor axis C.

2. The differential dissecting instrument of claim 1, wherein the tissue engaging surface further comprises projections that extend outward from the tissue engaging surface, wherein the projections are configured to sweep through any gel-like material that covers tightly packed, organized arrays of fibrous components that are part of the firm tissue, the projections further configured to snag and tear loosely packed fibrous components of the soft tissue, but to slip off of, and not snag, the tightly packed, organized arrays of fibrous components in the firm tissue.

3. The differential dissecting instrument of claim 2, wherein the projections have a projection length of less than one (1) millimeter (mm).

4. The differential dissecting instrument of claim 2, wherein the projections have a projection length of less than five (5) millimeters (mm).

5. The differential dissecting instrument of claim 1, wherein the differential dissecting member further comprises a three-dimensional surface having no sharp edges such that the differential dissecting member will not slice the complex tissue.

6. The differential dissecting instrument of claim 5, wherein the differential dissecting member has no edge having a radius of curvature smaller than 0.05 millimeters (mm).

7. The differential dissecting instrument of claim 5, wherein the differential dissecting member has no edge having a radius of curvature smaller than 0.025 millimeters (mm).

8. The differential dissecting instrument of claim 1, wherein the differential dissecting member further comprises at least one non-tissue engaging surface that can contact but does not engage the complex tissue such that the components of the complex tissue are not disrupted.

9. The differential dissecting instrument of claim 8, wherein the non-tissue engaging surface is smooth.

10. The differential dissecting instrument of claim 1, further comprising:

at least one additional surface disposed laterally to the tissue engaging surface, wherein the at least one additional surface is configured to wedge apart the complex tissue as the differential dissecting instrument is pressed into the complex tissue, thereby straining and aligning fibrous components of the at least one soft tissue perpendicular to the motion of the tissue engaging surface and thereby facilitating tearing of the fibrous components by the tissue engaging surface.

11. The differential dissecting instrument of claim 10, wherein the at least one additional surface comprises at least one surface on a shroud surrounding at least a portion of the differential dissecting member.

12. The differential dissecting instrument of claim 10, wherein the at least one additional surface comprises at least one non-tissue engaging surface on the differential dissecting member.

13. The differential dissecting instrument of claim 1, wherein the elongate member and the differential dissecting member are oriented with respect to each other such that the elongate member and the axis of rotation of the differential dissecting member form a presentation angle that is not zero, allowing the tissue engaging surface to be applied to a particular point on the complex tissue.

14. The differential dissecting instrument of claim 1, wherein the differential dissecting member is configured to oscillate at speeds ranging from sixty (60) to twenty thousand (20,000) cycles per minute.

15. The differential dissecting instrument of claim 1, wherein the differential dissecting member is configured to oscillate at speeds ranging from two thousand (2,000) to nine hundred thousand (900,000) cycles per minute.

16. The differential dissecting instrument of claim 1, wherein the major semi-axis A is longer than the first and second minor semi-axes (A>B and A>C).

17. The differential dissecting instrument of claim 1, wherein the major semi-axis A, the first minor semi-axes B, and the second minor semi-axis C all have different lengths ($A \neq B \neq C$).

18. The differential dissecting instrument of claim 1, wherein the differential dissecting member comprises a body; and further comprises the at least one tissue engaging surface distributed over at least a portion of the outer surface of the body and having:

a minimum placement radius, R_{min}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface closest to the axis of rotation,

a maximum placement radius, R_{max}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface furthest from the axis of rotation, and

the minimum placement radius, R_{min}, is greater than zero.

19. The differential dissecting instrument of claim 18, wherein the difference between the minimum placement radius, R_{min}, and the maximum placement radius, R_{max}, is equal to or greater than 5% of R_{max}, i.e. $(R_{max} - R_{min}) \geq 0.05*R_{max}$.

20. The differential dissecting instrument of claim 18, wherein the difference between the minimum placement radius, R_{min}, and the maximum placement radius, R_{max}, is equal to or greater than an average length, P_{avg}, of the projections, i.e. $(R_{max} - R_{min}) \geq P_{avg}$.

21. The differential dissecting instrument of claim 18, wherein R_{max} is greater than one (1) mm but less than one hundred (100) mm.

22. The differential dissecting instrument of claim 18, wherein R_{max} is greater than 0.5 mm but less than five (5) mm.

23. A differential dissecting member for dissecting a complex tissue, the differential dissecting member comprising:

a body having a first end and a second end with a central axis from the first end to the second end;

wherein the first end is configured to be directed away from the complex tissue and configured to be engaged with a drive mechanism that moves the differential dissecting member such that the second end sweeps along a direction of motion, and

wherein the second end comprises a tissue-facing surface that is configured to be directed toward the complex tissue;

wherein the tissue-facing surface comprises at least one tissue engaging surface comprised of an alternating series of at least one valley and at least one projection arrayed along the direction of motion on the tissue-facing surface such that the intersection of the at least one valley and at least one projection define at least one valley edge possessing a component of the at least one valley edge's direction perpendicular to the direction of motion, and

wherein the tissue-facing surface comprises a semi-ellipsoid shape defined by three orthogonal semi-axes, the three orthogonal semi-axes comprising a major semi-axis A, a first minor semi-axis B, and a second minor semi-axis C, and wherein the major semi-axis A is perpendicular to the axis of rotation, the second semi-minor axis C is parallel to the axis of rotation, and the first minor semi-axis B is perpendicular to both the major semi-axis A and the second semi-minor axis C.

24. The differential dissecting member of claim 23, wherein the at least one valley edge is not sharp.

25. The differential dissecting member of claim 23, wherein the differential dissecting member is configured to rotate around an axis of rotation oriented perpendicular to the central axis of the differential dissecting member such that the direction of motion of the second end is an arc of motion.

26. The differential dissecting member of claim 25, wherein the rotation is a reciprocal (back-and-forth) oscillation.

27. The differential dissecting member of claim 25, wherein the rotation is between sixty (60) and twenty-five thousand (25,000) cycles per minute.

28. The differential dissecting member of claim 25, wherein the rotation is between sixty (60) and one million (1,000,000) cycles per minute.

29. The differential dissecting member of claim 23, wherein the at least one valley edge has a radius of curvature at no point being smaller than 0.025 mm.

30. The differential dissecting member of claim 23, wherein the at least one valley edge has a radius of curvature at no point being smaller than 0.05 mm.

31. The differential dissecting member of claim 23, wherein the at least one valley edge has a radius of curvature that varies along a length of the at least one valley edge.

32. The differential dissecting member of claim 31, wherein the radius of curvature of the at least one valley edge is smallest at points furthest from the axis of rotation.

33. The differential dissecting member of claim 23, wherein the at least one projection further comprises a projection top formed by the tissue-facing surface spanning from a first valley edge on one side of the projection to a second valley edge on the opposing side of the projection.

34. The differential dissecting member of claim 23, wherein the at least one valley further comprises a valley bottom, a first valley wall abutting one side of the valley bottom, and a second valley wall abutting the opposing side of the valley bottom such that each valley wall joins a projection top at at least one valley edge.

35. The differential dissecting member of claim 34, wherein the first and second valley walls are straight in the direction parallel to the axis of rotation.

36. The differential dissecting member of claim 34, wherein at least one of the first and second valley walls is curved in three dimensions.

37. The differential dissecting member of claim 34, wherein at least one of the first and second valley walls and the projection top form a face angle Γ that is less than ninety degrees (90°).

38. The differential dissecting member of claim 34, wherein at least one of the first and second valley walls and the projection top form a face angle Γ that ranges from thirty degrees (30°) to one hundred fifty degrees (150°).

39. The differential dissecting member of claim 23, wherein the at least one valley edge traces a three-dimensional curve.

40. The differential dissecting member of claim 39, wherein the three-dimensional curve varies along a length of the three-dimensional curve.

41. The differential dissecting member of claim 23, wherein the at least one valley has a maximum depth of between 0.1 mm to five (5) mm.

42. The differential dissecting member of claim 23, wherein the at least one valley has a maximum width of between 0.1 mm to five (5) mm.

43. The differential dissecting member of claim 23, wherein the at least one valley has a minimum length of 0.25 mm.

44. The differential dissecting member of claim 23, wherein the at least one valley comprises two or more valleys.

45. The differential dissecting member of claim 44, wherein the two or more valleys are approximately parallel to each other.

46. The differential dissecting member of claim 23, the at least one valley is comprised of multiple, intersecting valleys.

47. The differential dissecting member of claim 23, wherein the major semi-axis A, the first minor semi-axis B, and the second minor semi-axis C all have different lengths ($A \neq B \neq C$).

48. The differential dissecting member of claim 23, wherein the major semi-axis A is longer than the first minor semi-axis B and the second minor semi-axis C ($A > B$ and $A > C$).

49. The differential dissecting member of claim 23, wherein the major semi-axis A is longer than first minor semi-axis B, which is longer than the second minor semi-axis C ($A > B > C$), and the second minor semi-axis C is parallel to the direction of motion.

50. The differential dissecting member of claim 23, wherein the differential dissecting member further comprises at least one lateral surface disposed beside the tissue engaging surface.

51. The differential dissecting member of claim 50, wherein the at least one lateral surface is configured to exert a wedging force on the complex tissue when the differential dissecting member is pressed into the complex tissue.

52. The differential dissecting member of claim 50, wherein the at least one lateral surface comprises a first lateral surface disposed on one side of the tissue engaging surface and a second lateral surface disposed on the opposing side of the tissue engaging surface, and wherein the first and second lateral surfaces are configured to exert a wedging force on the complex tissue when the differential dissecting member is pressed into the complex tissue.

53. The differential dissecting member of claim 52, wherein at least one valley spans from the first lateral surface to the second lateral surface and thus crosses an entirety of the tissue engaging surface.

54. The differential dissecting member of claim 23, wherein an entirety of the tissue contacting surface of the differential dissecting member is smooth and composed entirely of a material having a low friction with respect to the complex tissue.

55. The differential dissecting member of claim 23, wherein the tissue facing surface is lubricated.

56. The differential dissecting instrument of claim 1, wherein the major semi-axis A is longer than first minor semi-axis B, which is longer than the second minor semi-axis C (A > B > C), and the second minor semi-axis C is parallel to the axis of rotation.

57. A differential dissecting instrument for differentially dissecting complex tissue comprising:

a handle;

an elongate member having a first end and a second end, the first end connected to the handle;

a differential dissecting member configured to be rotatably attached to the second end, the differential dissecting member comprising at least one tissue engaging surface; and

a mechanism configured to mechanically rotate the differential dissecting member around an axis of rotation thereby causing the at least one tissue engaging surface to move in at least one direction against the complex tissue,

wherein the at least one tissue engaging surface is configured to selectively engage the complex tissue such that when the differential dissecting member is pressed into the complex tissue, the at least one tissue engaging surface moves across the complex tissue and the at least one tissue engaging surface disrupts at least one soft tissue in the complex tissue, but does not disrupt firm tissue in the complex tissue,

wherein the differential dissecting member comprises a body; and further comprises a tissue engaging surface distributed over at least a portion of the outer surface of the body and having:

a minimum placement radius, R_{min}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface closest to the axis of rotation,

a maximum placement radius, R_{max}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface furthest from the axis of rotation, and

the minimum placement radius, R_{min}, is greater than zero; and

wherein the difference between the minimum placement radius, R_{min}, and the maximum placement radius, R_{max}, is equal to or greater than 5% of R_{max}, i.e. $(R_{max} - R_{min}) \geq 0.05*R_{max}$.

58. A differential dissecting instrument for differentially dissecting complex tissue comprising:

a handle;

an elongate member having a first end and a second end, the first end connected to the handle;

a differential dissecting member configured to be rotatably attached to the second end, the differential dissecting member comprising at least one tissue engaging surface; and

a mechanism configured to mechanically rotate the differential dissecting member around an axis of rotation thereby causing the at least one tissue engaging surface to move in at least one direction against the complex tissue,

wherein the at least one tissue engaging surface is configured to selectively engage the complex tissue such that when the differential dissecting member is pressed into the complex tissue, the at least one tissue engaging surface moves across the complex tissue and the at least one tissue engaging surface disrupts at least one soft tissue in the complex tissue, but does not disrupt firm tissue in the complex tissue,

wherein the differential dissecting member comprises a body; and further comprises a tissue engaging surface distributed over at least a portion of the outer surface of the body and having:

a minimum placement radius, R_{min}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface closest to the axis of rotation,

a maximum placement radius, R_{max}, along a line perpendicular to the axis of rotation measured from the axis of rotation to a point on the tissue engaging surface furthest from the axis of rotation, and

the minimum placement radius, R_{min}, is greater than zero; and

wherein the difference between the minimum placement radius, R_{min}, and the maximum placement radius, R_{max}, is equal to or greater than an average length, P_{avg}, of the projections, i.e. $(R_{max} - R_{min}) \geq P_{avg}$.