CLAIMS:

1. An accelerometer for sensing acceleration along a sensing axis, comprising:
a flexure member, comprising a pendulum member pivotably connected to a support member via a hinge arrangement;
a housing; and
at least one mounting structure configured for clamping the support member to the housing in load bearing contact while concurrently allowing for differential movement between the support member and the housing in at least one direction different from said sensing axis;
wherein at least one said mounting structure comprises an elongated mounting post, anchored at a first longitudinal end thereof to the housing and anchored at the second longitudinal end thereof to the support member, wherein the mounting post is configured for allowing displacement between said first longitudinal end and said second longitudinal end along a plurality of axes orthogonal to said sensing axis to permit at least a portion of said differential movement between the support member and the housing.

2. The accelerometer according to claim 1, wherein said mounting post is cantilevered from said housing at said first longitudinal end and removably affixed to said support member at said second longitudinal end, wherein said mounting post is accommodated within a well formed in said housing, and wherein said second longitudinal end projects outwardly from a mouth of said well.

3. The accelerometer according to claim 1, wherein said mounting post is integrally formed with or fixedly mounted to said housing.

4. The accelerometer according to claim 1, wherein said mounting post is formed as a solid beam element having a cross-section that is uniform or varies along the longitudinal axis of the beam element.

5. The accelerometer according to claim 1, wherein said mounting post is configured for allowing displacement between said first longitudinal end and said second longitudinal end in a plurality of non-parallel directions orthogonal to said sensing axis.

6. The accelerometer according to claim 1, wherein said housing comprises two housing members configured for accommodating therebetween said flexure member.

7. The accelerometer according to claim 6, comprising at least three said mounting structures associated with each said housing member.

8. The accelerometer according to claim 7, wherein each said mounting structure associated with one said housing member is in longitudinally opposed relationship with a corresponding said mounting structure associated with the other said housing member.

9. The accelerometer according to claim 6, wherein said pendulum member is pivotably connected to said support member via a hinge arrangement, and wherein said mounting structures are located with respect to said flexure member at positions of 90°, 180° and 270° about a center axis thereof, the 0° position being associated with said hinge arrangement.

10. The accelerometer according to claim 1, wherein said mounting structures are configured for isolating said pendulum member from strain effects arising from said differential movement.

11. The accelerometer according to claim 1, wherein said flexure member and said housing comprise different thermal properties one from the other at least along directions orthogonal to said sensing axis.

12. The accelerometer according to claim 1, wherein said flexure member and said housing are made from materials having different coefficients of thermal expansion one from the other at least along directions orthogonal to said sensing axis.

13. The accelerometer according to claim 1, wherein said flexure member is made from a non-metallic material and said housing is made from a metallic material.

14. The accelerometer according to claim 1, wherein said flexure member is made from a material including at least one of the following: a metallic material, stainless steel, aluminum, titanium or alloys thereof; composites; silicon; fused quartz; a ceramic material; or a non-

metallic material; and wherein said housing is made from a material including at least one of the following: a metallic material, stainless steel, aluminum, titanium or alloys thereof; composites; silicon; fused quartz; a ceramic material; or a non-metallic material.

15. The accelerometer according to claim 1, wherein said mounting structure is at least one of deformable, bendable, or shearable for allowing said differential movement between the support member and the housing.

16. The accelerometer according to claim 1, wherein said mounting post is configured for allowing displacement between said first longitudinal end and said second longitudinal end in a direction orthogonal to said sensing axis by any one of bending, deforming or shearing of the mounting post with respect to a longitudinal axis of the mounting post.

17. The accelerometer according to claim 1, wherein said mounting structure is slidable for allowing said differential movement between the support member and the housing.

18. The accelerometer according to claim 1, further comprising a force sensing system configured for sensing movement of the pendulum member from a datum position in response to an acceleration or force applied to accelerometer along said sensing axis and for generating an output that is a measure of said acceleration or force.

19. The accelerometer according to claim 1, further comprising a force sensing system configured for sensing movement of the pendulum member from a datum position in response to an acceleration or force applied to accelerometer parallel to said sensing axis, for generating a restoring or balancing force to the pendulum member to return the pendulum member to the datum position, and for generating an output that is indicative of the restoring force, which in turn provides a measure of said acceleration or said force.

20. The accelerometer according to claim 1, wherein at least one said mounting structure is configured for clamping in load bearing contact the support member to the housing in a direction generally parallel to said sensing axis while concurrently allowing for said differential movement between the support member and the housing in at least one direction orthogonal to said sensing axis.

21. A housing member for use with a flexure member of an accelerometer for sensing acceleration along a sensing axis, the flexure member comprising a pendulum member hingedly connected to a support member via a hinge arrangement, the housing member comprising at least one mounting structure configured for clamping in load bearing contact the flexure member to the housing member while concurrently allowing for differential movement between the support member and the housing member in a direction orthogonal to said sensing axis;
wherein at least one said mounting structure comprises an elongated mounting post, anchored at a first longitudinal end thereof to the housing member and configured to be anchored at the second longitudinal end thereof to the support member, wherein the mounting post is configured for allowing displacement between said first longitudinal end and said second longitudinal end along a plurality of axes orthogonal to said sensing axis to permit at least a portion of said differential movement between the support member and the housing member.

22. The housing member according to claim 21, wherein said mounting structure is at least one of deformable, bendable, or shearable for allowing said differential movement between the support member and the housing member.

23. A flexure member for use with a housing of an accelerometer for sensing acceleration along a sensing axis, the flexure member comprising:
a pendulum member hingedly connected to a support member via a hinge arrangement; and
at least one mounting structure configured for clamping in load bearing contact the support member to the housing while concurrently allowing for differential movement between the support member and the housing in a direction orthogonal to said sensing axis;
wherein at least one said mounting structure comprises an elongated mounting post, anchored at a first longitudinal end thereof to the support member and configured for being anchored at the second longitudinal end thereof to the housing, wherein the mounting post is configured for allowing displacement between said first longitudinal end and said second longitudinal end along a plurality of axes orthogonal to said sensing axis to permit at least a portion of said differential movement between the support member and the housing.

24. The flexure member according to claim 23, wherein said mounting structure is at least one

of deformable, bendable, or shearable for allowing said differential movement between the support member and the housing.

25. An accelerometer for sensing acceleration along a sensing axis, comprising:
a flexure member, comprising a pendulum member pivotably connected to a support member via a hinge arrangement;
a housing; and
at least one mounting structure configured for clamping the support member to the housing in load bearing contact while concurrently allowing, at least at the location of said load bearing contact, for at least a portion of a differential displacement between the support member and the housing;
wherein at least one said mounting structure comprises an elongated mounting post, anchored at a first longitudinal end thereof to the housing and anchored at the second longitudinal end thereof to the support member, wherein the mounting post is configured for allowing displacement between said first longitudinal end and said second longitudinal end along a plurality of axes orthogonal to orthogonal to said sensing axis to permit at least a portion of said differential movement between the support member and the housing.