CLAIMS

1. A test fixture, comprising:

a first platform;

a second platform including a first cavity having a first opening extending through a first lateral end surface of the second platform, wherein the first cavity extends from the first opening toward a center of the second platform; and

a third platform including a second cavity having a second opening extending through a first lateral end surface of the third platform, wherein the second cavity extends from the second opening toward a center of the third platform;

wherein the second platform:

is disposed between the first platform and the third platform; and

is movable relative to the first platform and the third platform;

wherein the test fixture further includes a moving assembly configured to move the second platform relative to the first platform and the third platform.

2. The test fixture of claim 1, wherein the moving assembly has a first longitudinal axis, the moving assembly being coupled to each of the first platform, the second platform, and the third platform, wherein rotation of the moving assembly about the first longitudinal axis causes the second platform to move relative to the first platform and the third platform.

3. The test fixture of claim 2, wherein, at least a portion of each of the first cavity and the second cavity are disposed along a second longitudinal axis that is parallel to the first longitudinal axis of the moving assembly.

4. The test fixture of claim 1, wherein the first opening and the second opening

face a same direction.

5. The test fixture of claim 4, wherein the same direction is toward a front of the test fixture.

6. The test fixture of claim 1, wherein the first platform and the second platform are substantially parallel to one another.

7. The test fixture of claim 6, wherein the first platform and the third platform are substantially parallel to one another.

8. The test fixture of claim 1, wherein the first platform and the third platform are fixed relative to one another.

9. The test fixture of claim 1, wherein the moving assembly includes an endless screw.

10. The test fixture of claim 9, wherein the second platform includes a threaded fastener receiving the endless screw.

11. The test fixture of claim 2, wherein the first platform includes an actuating assembly configured to receive an end of the moving assembly, wherein the actuating assembly includes a thumbwheel configured to rotate the moving assembly about the first longitudinal axis.

12. The test fixture of claim 11, wherein the actuating assembly includes a collar

surrounded by the thumbwheel, wherein the moving assembly extends through the collar.

13. The test fixture of claim 1, further comprising a spring-loaded holder, wherein the spring-loaded holder is configured to contact and support a sample used in a compression test and/or a tensile test.

14. The test fixture of claim 1, wherein the second platform includes a first track and a second track, wherein each of the first track and the second track is configured to receive a spring-loaded holder.

15. The test fixture of claim 14, wherein the first track and the second track are collinear.

16. The test fixture of claim 14, further including a first spring-loaded holder configured to be received by the first track, and a second spring-loaded holder configured to be received by the second track.

17. The test fixture of claim 16, wherein the first spring-loaded holder includes a first finger and a first spring, wherein the first finger is biased toward the third platform by the first spring, and the second spring-loaded holder includes a second finger and a second spring, wherein the second finger is biased toward the third platform by the second spring.

18. The test fixture of claim 1, further including a spine secured to the first platform and the third platform, the second platform including a third opening through which the spine extends, wherein the spine is adjacent to closed ends of the first cavity and the second cavity.

19. The test fixture of claim 18, wherein the spine includes a polymer, and one or more sheets of metal disposed within the polymer.

20. The test fixture of claim 1, further including a U-shaped bracket removably received by the second cavity.

21. The test fixture of claim 20, wherein the second cavity includes one or more slots, and the U-shaped bracket includes one or more protrusions configured to be received by the one or more slots.

22. The test fixture of claim 1, wherein:

the second platform includes a second lateral end surface substantially parallel to the first lateral end surface of the second platform; and

the test fixture includes a first support and a second support coupled to the first platform and the second platform, wherein the first support and the second support are positioned closer to the first lateral end surface of the second platform than the second lateral end surface of the second platform.

23. The test fixture of claim 22, further including a third support coupled to the first platform and to the second platform, wherein the third support has a larger diameter than each of the first support and the second support, and the third support is positioned closer to the second lateral end surface of the second platform than the first lateral end surface of the second platform.

24. The test fixture of claim 22, wherein the moving assembly is positioned closer to the second lateral end surface of the second platform than the first lateral end surface of the second platform.

25. A test fixture, comprising:

a first platform;

a second platform including:

a cavity having an opening extending through a first lateral end surface of the second platform; and

a first track and a second track; and

a third platform;

wherein the second platform:

is disposed between the first platform and the third platform;

is movable relative to the first platform and the third platform;

wherein the test fixture further includes:

a moving assembly configured to move the second platform relative to the first platform and the third platform;

a first spring-loaded holder configured to be received by the first track, the first spring-loaded holder including a first finger and a first spring, wherein the first finger is biased toward the third platform by the first spring; and

a second spring-loaded holder configured to be received by the second track, the second spring-loaded holder including a second finger and a second spring, wherein the second finger is biased toward the third platform by the second spring.

26. The test fixture of claim 25, wherein the first track and the second track are

collinear.

27. The test fixture of claim 25, wherein the first spring-loaded holder is slidable on the first track and the second spring-loaded holder is slidable on the second track towards and away from the cavity of the second platform.

28. The test fixture of claim 25, wherein the first finger of the first spring-loaded holder and the second finger of the second spring-loaded holder each includes an inwardly-facing recess.

29. The test fixture of claim 25, wherein the first finger of the first spring-loaded holder and the second finger of the second spring-loaded holder are configured to contact a portion of the sample.

30. The test fixture of claim 25, wherein the first spring-loaded holder includes a first base and a first screw coupling the first finger to the first base and the second spring-loaded holder includes a second base and a second screw coupling the second finger to the second base.

31. The test fixture of claim 25, wherein the third platform includes a cavity having an opening extending through a first lateral end surface of the third platform, the cavity extending from the opening toward a center of the third platform.

32. The test fixture of claim 25, further including a moving assembly configured to move the second platform relative to the first platform and the third platform.

33. A test fixture, comprising:

a first platform;

a second platform including a cavity having an opening extending through a first lateral end surface of the second platform;

a third platform;

wherein the second platform:

is disposed between the first platform and the third platform;

is movable relative to the first platform and the third platform;

wherein the test fixture further includes:

a moving assembly configured to move the second platform relative to the first platform and the third platform; and

a spine secured to the first platform and the third platform, the second platform including an opening through which the spine extends, wherein the spine includes a polymer, and one or more sheets of metal disposed within the polymer.

34. The testing device of claim 33, wherein, when a load of about 200N is applied to the third platform, the third platform exhibits a displacement of no more than about 0.40 mm.

35. The testing device of claim 34, wherein the third platform exhibits a displacement of no more than about 0.23 mm, when the load is applied.

36. A test fixture, comprising:

a first platform;

a second platform including a first cavity having a first opening extending through a first lateral end surface of the second platform, wherein the first cavity extends from the first opening toward a center of the second platform; and

a third platform including a second cavity having a second opening extending through a first lateral end surface of the third platform, wherein the second cavity extends from the second opening toward a center of the third platform;

wherein the second platform:

is disposed between the first platform and the third platform; and

is movable relative to the first platform and the third platform;

wherein the test fixture further includes:

a moving assembly configured to move the second platform relative to the first platform and the third platform; and

a spine secured to the first platform and the third platform, the second platform including an opening through which the spine extends,

wherein, when a load of about 200N is applied to the third platform, the third platform exhibits a displacement of no more than about 0.40 mm.

37. The test fixture of claim 36, wherein the third platform exhibits a displacement of no more than about 0.23 mm, when the load is applied.