CLAIMS

What is claimed is:

1. A MEMS actuator, comprising:

an inner frame, the inner frame comprising a first shock stop; and

an outer frame coupled to the inner frame by a plurality of flexures, wherein the outer frame comprises a second shock stop configured to contact the first shock stop in the event of a shock;

wherein the first shock stop and second shock stop each comprise a plurality of apertures, and wherein at least one aperture of the plurality of apertures contains a material to adjust stiffness of the at least one aperture.

2. The MEMS actuator of claim 1, wherein the apertures are circular and wherein the diameter of the apertures is between 10 and 20 um.

3. The MEMS actuator of claim 1, wherein:

the inner frame comprises a third shock stop;

the outer frame comprises a fourth shock stop configured to contact the third shock stop in the event of a shock; and

the third shock stop and fourth shock stop each comprise a plurality of apertures.

4. The MEMS actuator of claim 1, wherein the apertures are spaced part in a hexagonal pattern.

5. A shock stop for a microelectromechanical systems (MEMS) device, comprising:

a plurality of circular apertures with a diameter between 10 and 20 micrometers, wherein the shock stop is between 0.250 and 1.000 millimeters wide and between 0.0250 and

1.200 millimeters long, and wherein at least one aperture of the plurality of apertures contains a material to adjust stiffness of the at least one aperture.

6. The shock stop of claim 5, wherein at least one aperture of the plurality of apertures is one of circular and a shape other than circular.

7. The shock stop of claim 5, wherein the material includes epoxy glue.

8. The MEMS actuator of claim 1, wherein the material includes epoxy glue.

9. The MEMS actuator of claim 1, wherein at least one aperture of the plurality of apertures is one of circular and a shape other than circular.