

platform **1306** is extension **1303**. On top of the extension at least one sensor **1301** may be placed. The sensor may monitor, among other characteristics of the six-degree of freedom micro-positioner, translation and rotation of the moving platform. Each sensor may communicate with controller **1215**.

The extension also may have at least one extrusion **1302** to limit displacement of the moving platform. The extrusion or extrusions can prevent the moving plate from tilting beyond a predetermined angle.

It will also be recognized by those skilled in the art that, while the invention has been described above in terms of one or more preferred embodiments, it is not limited thereto. Various features and aspects of the above described invention may be used individually or jointly. Further, although the invention has been described in the context of its implementation in a particular environment and for particular purposes, e.g. micro-positioning, those skilled in the art will recognize that its usefulness is not limited thereto and that the present invention can be beneficially utilized in any number of environments and implementations. Accordingly, the claims set forth below should be construed in view of the full breath and spirit of the invention as disclosed herein.

We claim:

1. A positioning device, comprising:
 - a movable platform;
 - a plurality of struts attached to the movable platform; and
 - a monolithic base having multiple integral positioning stages supporting each of the plurality of struts, and configured to move the plurality of struts to thereby move the movable platform.
2. The positioning device of claim 1, further comprising: a plurality of flexures configured to attach each of the plurality of struts to the movable platform and the monolithic base.
3. The positioning device of claim 1, wherein the plurality of struts is six struts.
4. The positioning device of claim 3, wherein the six struts are symmetrically attached about the movable platform.
5. The positioning device of claim 1, further comprising: at least one sensor configured to sense movement of the movable platform.
6. The positioning device of claim 1, further comprising: a stop member configured to limit movement of the movable platform.

7. The positioning device of claim 1, wherein the positioning device is a micro-positioning device.

8. The positioning device of claim 1, wherein the monolithic base includes:

- a first positioning stage;
- a second positioning stage; and
- a third positioning stage;

wherein a respective portion of the plurality of struts is attached to each of the first, the second and the third positioning stages.

9. The positioning device of claim 8, wherein each of the first, the second and the third positioning stages is configured to move in two orthogonal directions.

10. The positioning device of claim 8, wherein each of the first, the second and the third positioning stages is configured to move independent of the other positioning stages.

11. The positioning device of claim 8, wherein:

the respective portion of the plurality of struts attached to each of the first, the second and the third positioning stages moves as a result of movement of the positioning stage to which that portion is attached.

12. The positioning device of claim 8, wherein each of the first, the second and the third positioning stages are formed by machining the monolithic base.

13. The positioning device of claim 8, wherein the movable platform moves as a result of movement of at least one of the first, the second and the third positioning stages.

14. The positioning device of claim 8, wherein:

the respective portion of the plurality of struts attached to each of the first, the second and the third positioning stages is attached to the center of each of the first, the second and the third positioning stages.

15. The positioning device of claim 1, wherein:

the monolithic base includes a plurality of integral positioning stages; and
the plurality of integral positioning stages are configured to support each of the plurality of struts and to move each of the plurality of struts to thereby move the movable platform.

16. The positioning device of claim 15, wherein the monolithic base is planar.

17. The positioning device of claim 1, wherein the monolithic base is further configured for movement with six-degrees of freedom.

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