

## Perfect Plane Mechanism

**This technology offers a mechanical linkage for perfect movement. This device can be used to move a point in a plane, on a large diameter sphere, or on a line or circle, and combines movement to reduce constraint.**

### What is the Problem?

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Precise movement of mechanical linkages are essential to a variety of applications in a number of technical fields. However, existing mechanical linkages that are able to deliver high levels of precision of movement are typically reserved for expensive high-end machines. Therefore, an improved low-cost mechanical linkage allowing for precise movements may be desirable.

### What is the Solution?

The solution is a mechanical linkage allowing movement in a perfect plane, or large diameter sphere, of one end of the mechanism relative to the other. This mechanical linkage structure constrains the movement of a point to the plane referencing only a ground link. It is the physical manifestation of the idea that a normal can define a plane. It is the generalization of the first straight line Mechanism developed in the 1800s known as the Peaucellier-Lipkin linkage. The device can be used to move a point in a plane, on a large diameter sphere, or on a line or circle. Combining them makes a movement device that can constrain a body to a plane and uses no shafts for parallel movement. This has applications in automotive suspensions, MEMS devices, Measurement tools, Machining tools, 3D printers and more.

### What is the Competitive Advantage?

Current mechanical linkages offer high precision but are high cost, and so are not used in lower-cost machines. This solution brings a level of precision reserved for high-end machines costing hundreds of thousands of dollars down to the tens of dollars level, enabling use of this high precision mechanical linkage technology in a variety of new lower-cost products instead of only high cost products.

### Patent Information:

[WO2022232378A1](#)

### Technology ID

BDP 8399

### Category

Device/Other

Hardware/Other

Selection of Available

Technologies

### Authors

Jeffrey Lipton

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