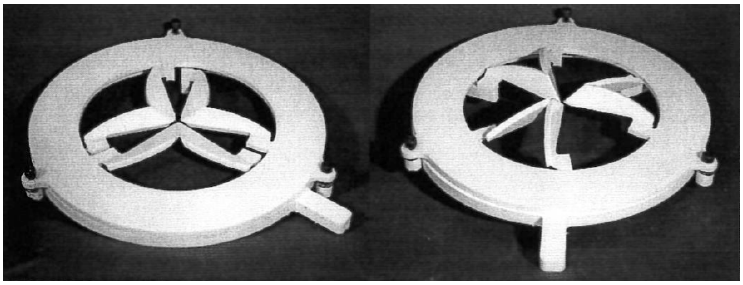
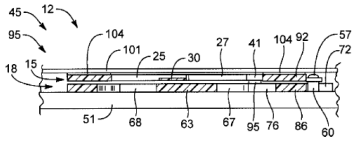
Out-of-Plane Morphing Mechanism

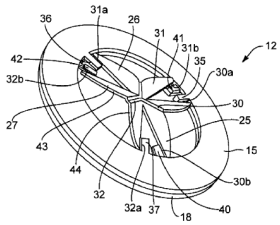
BYU #2007-26

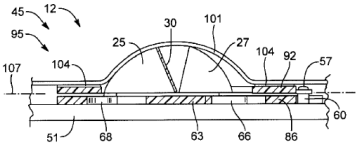
DESCRIPTION

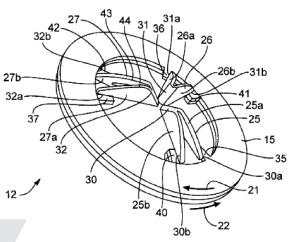
Researchers at BYU developed a mechanism which may be placed in, on or under a surface to change the shape of that surface. The mechanism is manufactured from flat sheets of material and may be mechanically actuated to move between a flat state and a raised state.











PROBLEM SOLVED

This mechanism may be used in many applications where it is important to save space and reduce costs. The invention can alter its shape to rise above a surface, but since the mechanism is composed of layers of sheet material, it has the ability to fold completely flat and is therefore very compact. In addition, the flat sheets required to produce it can be manufactured using simple operations.

KEY ADVANTAGES

- ***Simple and inexpensive to manufacture***
- ***Conserves space and energy***

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APPLICATIONS

Possible applications include, but are not limited to portable electronic devices and micro-electro-mechanical systems (MEMS). Also, electrical actuation of an array of morphing mechanisms would allow new possibilities for button configurations, or for surface texturing.

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US Patent 8210065

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BYU TECHNOLOGY transfer

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