

Origami-Eggbox-Inspired Spinal Fusion Implant

ID: 2017-082

Executive Statement:

An innovative spinal fusion implant inspired by origami patterns, designed to enhance patient recovery post-surgery.

Technology Overview:

This technology is a spinal fusion implant that utilizes the principles of thick origami, specifically the "eggbox" pattern, to achieve a compact form for insertion that can then expand to act as a fusion cage. Developed by the Brigham Young University's Center for Mechanical Rehabilitation, this invention aims to improve spinal fusion surgeries by reducing the incision size and trauma involved, thereby facilitating quicker patient recovery.

Key Advantages:

- Compact design reduces the size of surgical incisions
- Expands post-insertion to effectively act as a fusion cage
- Origami-inspired design allows for load-bearing capacity post-deployment
- Potentially reduces patient recovery times and improves outcomes

Problems Addressed:

- Large incisions and trauma associated with traditional spinal fusion surgeries
- Limited load-bearing capacity of existing spinal fusion implants
- Extended recovery periods for patients undergoing spinal fusion surgeries

Market Applications:

- Spinal fusion surgeries
- Orthopedic implants and devices for surgical use
- Biomedical companies interested in advanced surgical implant technologies