TECHNOLOGY

Interbody Cage for Spinal Stabilization

OVERVIEW

Summary

The patented technology is an interbody cage designed for spinal stabilization. The cage is characterized by a frame surrounding a central compartment capable of retaining biological material, specifically bone grafts, during surgery. The global market for spinal implants and surgery devices is expected to grow significantly due to factors such as an aging population, an increase in the prevalence of spinal disorders, and technological advancements. The innovative design of the interbody cage, which includes an openable mesh cover and a compartment for efficiently retaining biological material, addresses a critical need in spinal surgeries. This technology holds promise for improving surgical outcomes and enhancing patient care in spinal surgeries.

Market

The global spinal implants and surgery devices market is expected to experience significant growth in the coming years. According to a report by Fortune Business Insights, the global spinal fusion device market size was valued at USD 6.37 billion in 2018 and is projected to reach USD 8.45 billion by 2026, exhibiting a CAGR of 3.6% during the forecast period. This growth is driven by an aging population, an increase in the number of spinal surgeries, and advancements in technology.

Spinal fusion surgeries, in which interbody cages are specifically used, are performed to reduce back pain and stabilize the spine by fusing two or more vertebrae. These surgeries are particularly relevant for treating degenerative disc diseases such as lumbar degenerative disc disease and cervical degenerative disc disease. The increasing global geriatric population and the prevalence of these diseases are likely to be key drivers for the demand for spinal fusion surgeries.

Within the spinal implants market, the interbody cages segment is particularly promising. The interbody cages are critical components used in spinal fusion surgeries to restore intervertebral height and facilitate fusion between the vertebrae. The patented interbody cage's unique design, which includes a central compartment for efficiently retaining biological material, addresses a critical need in spinal surgeries. Additionally, the market demand is expected to be fueled by the increasing preference for minimally invasive surgeries, which require advanced and specialized devices such as the interbody cages described in the patent. The North American region, particularly the United States, is expected to be a significant market for this technology due to the high prevalence of spinal disorders and the presence of advanced healthcare infrastructure. Emerging markets in Asia-Pacific and Latin America are also expected to contribute to market growth due to increasing healthcare expenditure and growing awareness of advanced spinal surgery procedures in these regions.

Technology

US Patent 10,765,525 describes an interbody cage designed for spinal stabilization. The interbody cage is characterized by a frame that surrounds a central compartment. This central compartment is specifically designed to retain biological material, such as bone graft material, efficiently during surgery. The frame of the cage includes a top face and a bottom face, both of which are equipped with ridges to facilitate secure positioning.

One innovative aspect of this technology is the design of the frame, which is made of a rigid material suitable for withstanding the compressive forces of the spine when fully loaded. At least a portion of the frame is open to allow for new bone growth into the central compartment, which is critical for successful spinal fusion. The frame can be made of various materials, including metals and polymers, and can have different prefabricated textures to facilitate osseointegration, which is the integration of the implant with the surrounding bone.

The cage includes a mesh cover that covers the bottom openings of the frame. Additionally, there is an openable mesh cover that can be secured to the top face of the frame in a closed position and is capable of being opened. The mesh is suitable for retaining biological material and can be either rigid or flexible, allowing for additional volume of bone graft material to be placed inside the central compartment. Moreover, the frame is configured to receive an insertion rod, which is critical for the surgical insertion process. The interbody cage is configured to receive biological material without the need for additional special equipment and remains securely positioned when placed into the interbody spinal space.

References

Fortune Business Insights, "Spinal Fusion Devices Market Size, Share & Industry Analysis," Spinal Fusion Devices Market Size, Share & Growth | Global Report, 2030.

CONTACT INFO

Office of Technology Transfer
620 W Lexington St., 4th Floor
Baltimore, MD 21201
Email: ott@umaryland.edu
Phone: (410) 706-2380

Additional Information

INSTITUTION

University of Maryland, Baltimore

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Available for licensing

INVESTIGATOR(S)

Charles Sansur
Steven Ludwig

ATTACHMENTS

- Download CS-2016-080 (Sansur) Interbody Spinal Cage (Summary).pdf

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