

Adjustable Universal Platform for Surgical Navigation, Approach, and Implantation

Summary

Vanderbilt researchers have developed an adjustable universal platform for stereotactic neurosurgery. The device enables quick and accurate correction of probe position and trajectory.

Addressed Need

Stereotactic neurosurgery, for deep brain stimulation, biopsy, or device implantation, is a lengthy procedure for which patients remain awake. It is challenging to maintain accuracy and patient comfort as a long, rigid probe is slowly advanced through the skull. Typical stereotactic neurosurgery involves the advancement of the probe by means of a mechanical device attached to the skull. Prior devices for stereotactic neurosurgery have varied from large metal frames that encompass the entire head to small platforms placed over the entry site.

There is a need for a means to quickly and accurately vary the position and trajectory to match patient anatomy for a particular procedure, and to intraoperatively guide surgical instruments with accuracy at the desired settings.

Technology Description

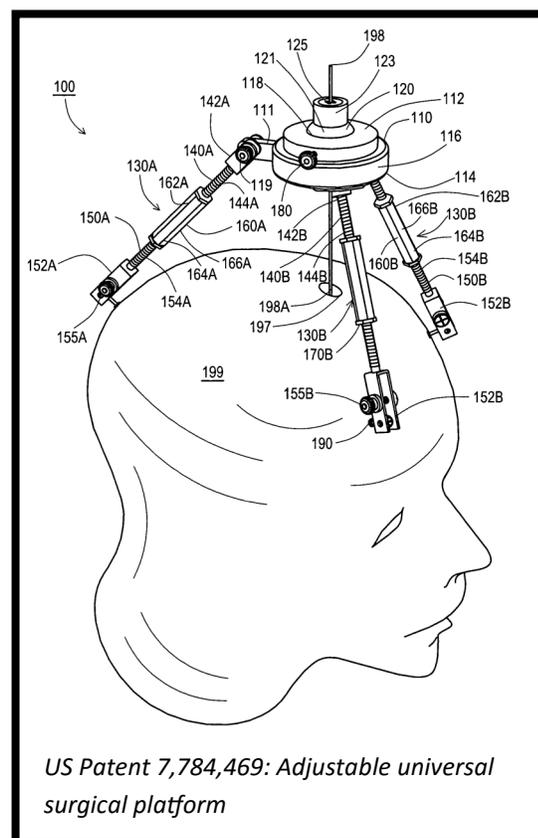
The platform consists of a ring structure that encompasses a lockable ball joint. A probe extends through a bore along the central axis of the ball joint and into the brain. An instrument stabilizer minimizes unwanted motion at the distal end of a surgical instrument by applying a damping force to the instrument. Multiple arms of adjustable length extend radially from the ring structure. The distal ends of these arms mount onto the skull.

Technology Features

- Easily adjustable
- Stable and easy to lock
- Metallic construction for multiple usages or plastic construction for single use

Intellectual Property Status

- US Patent [7,794,469](#) has been issued.
- Visit the [Vanderbilt Department of Neurology](#) for a detailed description of ongoing research programs, core research capabilities, and a list of publications.



CTTC CONTACT:

Ashok Choudhury
(615) 322-2503
ashok.choudhury@vanderbilt.edu

INVENTORS:

C. Chris Kao, M.D., Ph.D.
Vanderbilt Research Associate Professor
Department of Neurological Surgery

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