

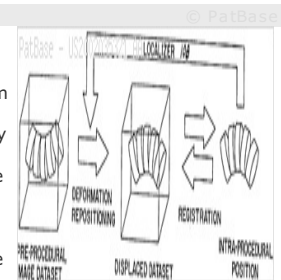
1) Family number: 20171427 (US2002035321A)

SURGICAL NAVIGATION SYSTEMS INCLUDING REFERENCE AND LOCALIZATION FRAMES

Abstract: Source: US2002035321A A system for use during a medical or surgical procedure on a body. The system generates an image representing the position of one or more body elements during the procedure using scans generated by a scanner prior or during the procedure. The image data set has reference points for each of the body elements, the reference points of a particular body element having a fixed spatial relation to the particular body element. The system includes an apparatus for identifying, during the procedure, the relative position of each of the reference points of each of the body elements to be displayed. The system also includes a processor for modifying the image data set according to the identified relative position of each of the reference points during the procedure, as identified by the identifying apparatus, said processor generating a displaced image data set representing the position of the body elements during the procedure. The system also includes a display utilizing the displaced image data set generated by the processor, illustrating the relative position of the body elements during the procedure. Methods relating to the system are also disclosed. Also disclosed are devices for use with a surgical navigation system having a sensor array which is in communication with the device to identify its position. The device may be a reference frame for attachment of a body part of the patient, such as a cranial reference arc frame for attachment to the head or a spine reference arc frame for attachment to the spine. The device may also be a localization frame for positioning an instrument relative to a body part, such as a localization biopsy guide frame for positioning a biopsy needle, a localization drill guide assembly for positioning a drill bit, a localization drill yoke assembly for positioning a drill, or a ventriculostomy probe for positioning a catheter.

Probable Assignee: SURGICAL NAVIGATION TECHNOLOGIES INC

Earliest Publication Date: 19920430



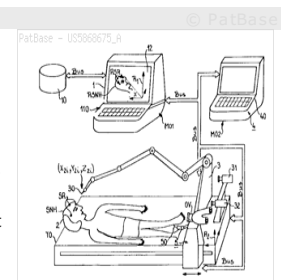
2) Family number: 3469522 (US5868675A)

INTERACTIVE SYSTEM FOR LOCAL INTERVENTION INSIDE A NON-HOMOGENEOUS STRUCTURE

Abstract: Source: US5868675A PCT No. PCT/FR90/00714 Sec. 371 Date Jun. 22, 1992 Sec. 102(e) Date Jun. 22, 1992 PCT Filed May 10, 1990 PCT Pub. No. WO91/04710 PCT Pub. Date Apr. 18, 1991An interactive system for a local intervention inside a region of a non-homogeneous structure, such as the skull of a patient, which is related to the frame of reference (R2) of an operation table, and which is connected to a reference structure comprising a plurality of base points. The system creates on a screen a representation of the non-homogeneous structure and of the reference structure connected thereto, provides the coordinates of the images of the base points in the first frame of reference (R1), allows the marking of the coordinates of the base points in R2, and allows the carrying out of the local intervention with an active member such as a trephining tool, a needle, or a radioactive or chemical implant. The systems also optimizes the transfer of reference frames between R1 and R2, from the coordinates of the base points in R2 and the images in R1 by reducing down to a minimum the deviations between the coordinates of images in R1 and the base points in R1 after transfer. The system also establishes real time bi-directional coupling between: (1) an origin and a direction of intervention simulated on the screen, (2) the position of the active member.

Probable Assignee: MEDTRONIC INC

Earliest Publication Date: 19910412



3) Family number: 29111615 (US2002026221A)

METHOD AND DEVICE FOR ELECTRONICALLY CONTROLLING THE BEATING OF A HEART

Abstract: Source: US2002026221A An electro-stimulation device includes a pair of electrodes for connection to at least one location in the body that affects or regulates the heartbeat. The electro-stimulation device both electrically arrests the heartbeat and stimulates the heartbeat. A pair of electrodes are provided for connection to at least one location in the body that affects or regulates the heartbeat. The pair of electrodes may be connected to an intravenous catheter for transvenous stimulation of the appropriate nerve. A first switch is connected between a power supply and the electrodes for selectively supplying current from the power supply to the electrodes to augment any natural stimuli to the heart and thereby stop the heart from beating. A second switch is connected between the power supply and the electrodes for selectively supplying current from the power supply to the electrodes to provide an artificial stimulus to initiate heartbeating. In another aspect, the invention is directed to a method for arresting the beat of a heart in a living body comprising the steps of connecting the pair of electrodes to at least one location in the body that affects or regulates the heartbeat and supplying an electrical current to the electrodes of sufficient amplitude and duration to arrest the heartbeat. The device may also serve to still the lungs by input to a respirator or by stimulation of the phrenic nerve during surgical procedures.

Probable Assignee: ECARDLESS BANCORP LTD

Earliest Publication Date: 19971106

