

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Peter M. Bonutti

Confirmation No.: 7974

Application No.: 11/928,898

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Examiner: P. Philogene

For: MINIMALLY INVASIVE SURGICAL SYSTEMS
AND METHODS

Docket No: 780-A07-012CON

RESPONSE TO OFFICE ACTION

Mail Stop: Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Introductory Comments

Dear Sir:

In response to the Office Action mailed March 11, 2010, please enter the following amendments and remarks into the file of the above-entitled application. In accordance with USPTO practice, each section of this Response begins on a separate sheet.

Applicant submits, these amendments and remarks serve to clarify the present invention and are independent of patentability.

Amendments to the Claims

1. (Currently amended) A device to replace an articulating surface of a joint in a body, the joint having first and second sides, comprising:

a base component, including a bone ~~engaging~~ contacting side connectable with bone on the first side of the joint, and a base sliding side on an opposite side of said base component relative to said bone contacting side, having a surface defining a first curved shape;

a movable component, including a movable sliding side ~~having~~ operable to be positioned in contact with said base sliding side upon a surface defining a second curved shape, said second curved shape being complementary to said first curved shape, said movable sliding side thereby being matably positionable in sliding engagement with said base sliding side, and an articulating side on an opposite side of said movable component relative to said movable sliding side, shaped to matingly engage an articulating surface of the second side of the joint;

wherein when said base component is connected to the first side of a joint, and said base sliding side is pressed against said movable sliding side, said first and second curved shapes tend to releasably slide to a resting position with respect to each other during use of the device in the body, aligning both sides of the joint to a desired orientation.

2. (Previously presented) The device of claim 1, wherein said base sliding side has a concave shape.

3. (Original) The device of claim 2, wherein the joint is a knee joint.

4. (Original) The device of claim 1, wherein one of said first and second curved shapes is substantially convex, and the other of said first and second curved shapes is substantially concave.

5. (Canceled)

6. (Currently amended) The device of claim ~~[[151]]~~ 138, wherein said protrusion and said recess are located substantially offset from a center of said device.

7. (Previously presented) The device of claim 138, wherein the joint is a knee, and said protrusion and said recess are medially offset from a center of said device, whereby said base sliding side and said movable sliding side are less constrained to slideably engage on a lateral side of engagement than on a medial side of engagement, thereby correlating to the movement of a natural knee joint.

8. (Previously presented) The device of claim 1, wherein one of said surface of said base sliding side and said surface of said movable sliding side is metallic, and the other of said surface of said base sliding side and said surface of said movable sliding side is polymeric.

9. (Currently amended) The device of claim 1, wherein said bone ~~engaging~~ contacting side, base sliding side, movable sliding side and articulating side include a material selected from the group consisting of: metal, cobalt-chromium alloy, titanium alloy, polymer, ceramic, ultra high molecular weight polymer, porous cement, copolymer, dipolymer, hydrophilic material, petroylglupamic acid, carboxymethylcellulose, collagen, polylactide, hydroxyapatite, polyethylene, polylactide, and polyhydroxybutyrate.

10-137. (Canceled)

138. (Currently amended) A device to replace an articulating surface of a first side of a joint in a body, the joint having first and second sides, comprising:

a base component, including a bone ~~engaging~~ contacting side connectable with bone on the first side of the joint, and a base sliding side on an opposite side of said base component relative to said bone contacting side;

a movable component, including a movable sliding side, said movable sliding side being matably positionable in sliding engagement with said base sliding side, and an articulating side on an opposite side of said movable component relative to said movable sliding side, shaped to matingly engage an articulating surface of the second side of the joint;

a protrusion extending from one of said base sliding side or movable sliding side, said protrusion substantially offset with respect to a midline of the first side of a joint;

a recess sized to receive said protrusion, disposed in the other of said base sliding side or movable sliding side, said protrusion and recess matable to constrain movement of said first and second components relative to each other, thereby promoting movement of the joint within desired anatomical limits.

139. (Previously presented) The device of claim 138, wherein the joint is a knee.

140. (Previously presented) The device of claim 138, further including a second base component connected to the second side of the joint, including an articulating surface matable with said articulating side of said movable component.

141. (Previously presented) The device of claim 140, wherein the joint is a knee, and the first base component is connected to the tibia, and the second base component is connected to the femur, or the first base component is connected to the femur, and the second base component is connected to the tibia.

142. (Previously presented) The device of claim 138, wherein said protrusion and recess engage to permit relative rotation of said base sliding side and said movable sliding side about an axis of said protrusion.

143. (Previously presented) The device of claim 138, wherein said protrusion is a pin, and said recess is a hole sized to receive said pin.

144. (Previously presented) The device of claim 138, wherein said protrusion is a dovetail pin and said recess is a dovetail tail, together forming a dovetail joint.

145. (Previously presented) The device of claim 144, wherein said dovetail joint is elongated, extends in a substantially anterior-posterior orientation, and enables anterior-posterior displacement of the base sliding side relative to the movable sliding side.

146. (Previously presented) The device of claim 138, further including means associated with said protrusion to prevent a separation of said base sliding side and said movable sliding side.

147-148. (Canceled)

149. (Previously presented) The device of claim 1, wherein the curved shape of said base sliding side and said movable sliding side are different, one curved shape being smaller than the other.

150. (Previously presented) The device of claim 1, wherein the curved shape of said base sliding side or said movable sliding side has a curvature selected from the group consisting of: constant radius, variable radius, progressively varying radius.

151. (Previously presented) The device of claim 1, wherein not all articulating compartments of the joint are replaced by said device.

152. (Previously presented) The device of claim 1, wherein the joint is located in a finger, wrist, elbow, shoulder, spine, hip, knee, ankle, or toe.

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