Abstract
Technology offers an adjustable bone implant for the fractured bones and also for bone shortening and bone lengthening procedures. Implant provides compression and distraction functionality therefore the patient won’t need to get any further operations. Since the plate is adjustable in nature, additional bone nails, screws or apparatus won’t be required therefore the operations would be minimally invasive.

Technical Overview
Bone fractures are very common medical incidences mainly associated with accidents and osteoporosis. Although the market is seeing significant growth due to an increase in incidences of fracture cases and the raising number of participants in sports, the factors such as double surgery is a major restraint faced.

This bone plate is engineered to overcome problems associated with the state-of-the-art bone plates such as the need for extra surgeries or extra implant needs, risk of complications. It is directly fixed to the bone thus allows external manipulation. Furthermore, bone segments can be aligned precisely and properly without using inserts introduced into the bone along its axis and the bone plate contact surface is reduced, allowing minimization of the risk of infection. Moreover non-use of such an insert which is normally introduced into the bone in its full length prevents vein/nerve and soft tissue injuries that may occur in surgical bone operations.
Technology Features & Specifications

Present bone plate is...

**Adjustable:** Therefore it facilitates bone distraction and compression after the surgery. The implant does not require implantation of any additional bone screws, nail or apparatus. Gear mechanism adjustable from outside: It increases the fracture stability substantially by providing compression and distraction at the fracture line.

**Lockable:** Can be locked after adjusting.

**Inserted through small incisions:** The implant is suitable for “minimally invasive surgery” technique, therefore bone loss in comminuted fractures is minimized.

**Implanted on the bone:** This feature of the implant reduces vessel / nerve injury during the surgery.

**Low contact surface:** providing minimum contact with bone surface thus facilitating bone union.

Potential Applications

Bone plates can be categorized as fracture fixation products that are used orthopedic trauma surgeries.

Customer Benefits

- No further operations/surgeries needed for malpositioning due to the adjustable feature of the plate.
- Lower risk of complications including infections and /or bleeding.
- Easy implementation and no additional costs since no auxiliary elements such as external fixators are needed.
- Cost effective and high patient compliance since no further operations are needed.

Market Trends and Opportunities

Severe injuries of the musculoskeletal system of the body are known as orthopedic traumas. Primary factors driving orthopedic trauma devices are accidents and osteoporotic fractures. According to another research fractures account for an estimated 10.2 million visits a year to hospitals only in U.S. According to the Market Report on “Global Market Study on Orthopedic Trauma Devices” released by Persistence Market Research, the global market is valued at $5.7 billion in 2013 and is expected to grow at a CAGR of 7.2% from 2014 to 2020, to reach an estimated value of $9.4 billion in 2020. According to the report, North America holds the largest share of the market while the Asia region is witnessing the fastest growth. According to another report by iData Research Inc. on “U.S. Orthopedic Trauma Device Market” the value will exceed $8 billion by 2020.

Additional Technical Information

**PCT patent application:** WO 2014/033088 A1 dated 26.08.2013

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