

## ***MIXING APPARATUS WITH STATIONARY SHAFT***

### **ABSTRACT**

A mixing system for mixing fluids or the like in a mixing vessel. The mixing system includes a fixed conduit connected to the top portion of the vessel extends into the vessel. The system also has a rotating shaft having disposed within the fixed conduit that rotates within the fixed conduit while the mixing system is in operation. An impeller is attached to the rotating shaft. The impeller blade has a flat central disk portion, at least a pair of extensions extending from a central disk portion, and at least two leading edges defined by the outer periphery of the disk portion. Each leading edge spans from one extension to an adjacent extension, and each leading edge has at least a portion at which the radius of the leading edge from the center increases to form a continuous increasing radius curve. Each leading edge forms an increasing radius spiral edge surface in between the extensions.

FIG. 5