ABSTRACT

A FLOATING COLLAR CLAMPING DEVICE FOR AUTO-ALIGNING NUT AND SCREW IN LINEAR MOTION LEADSCREW AND NUT ASSEMBLY

An auto-aligning linear motion apparatus is provided. The apparatus includes a leadscrew. The apparatus also includes a nut arrangement configured to surround the leadscrew, wherein the nut arrangement includes at least a nut, a nut bracket, and a floating collar. A shoulder screw is inserted through a nut bracket slot of the nut bracket and a nut slot of the nut to rest at least partially within the floating collar. One dimension of the nut bracket slot is larger than a dimension through a cross-section area of the shoulder screw to enable the shoulder screw to move within the nut bracket slot to adjust the nut arrangement as the leadscrew is rotated to maintain a concentric relationship between the nut arrangement and the leadscrew.

FIG. 4