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(54) Title: COAXIAL ROTARY SHAFT FEEDTHROUGH WITH BACKLASH REDUCTION

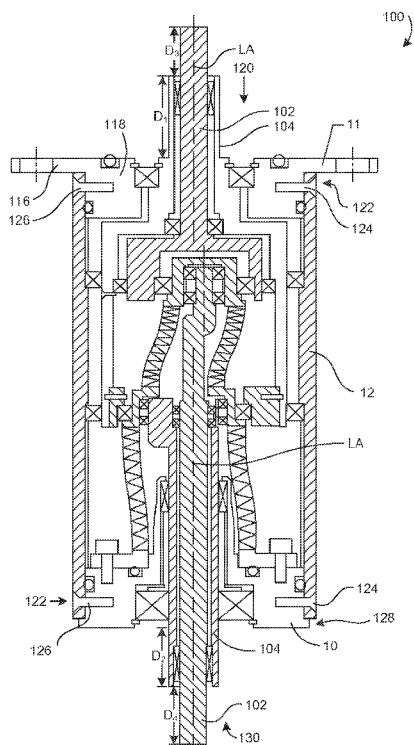


FIG. 1A

(57) Abstract: A sealed dual coaxial rotary shaft feedthrough device is provided. The device includes an inner shaft and a hollow outer shaft that is coaxial to encompass the inner shaft. The shafts include coupled drive and driven shafts. The coupling, which may be referred to as an eccentric coupling, causes the driven shaft to rotate with the drive shaft. The rotation is transmitted without breaking the seal by an eccentric portion of either the drive or driven shaft being nutatingly coupled to either a transition cap or transition cup. Nutatingly coupled means rotation of the shaft causes the transition cap or cup to orbit, but not spin, about the longitudinal axis. The nutation is transmitted by the transition cap or cup to the other of the shafts, which rotates.

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