

ABSTRACT

ROBOTIC ARM DRIVING MECHANISM

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A robotic arm assembly is provided comprising a driving mechanism including a rotor which is rotatable relative to a stator. The rotor is coaxially rotatable about a columnar shaft having a substantially hollow central longitudinal axis. A first arm having proximal and distal pivotal ends is rigidly mounted on the rotor such that the first arm is drivable to rotate by the driving mechanism. A proximal pivotal end of a second arm having proximal and distal pivotal ends is pivotally connected to the proximal pivotal end of the first arm. A first timing pulley is mounted coaxially onto the columnar shaft, and a second timing pulley which is spaced from the first pulley is drivable to rotate together with rotation of the first arm. A timing belt connects the first and second timing pulleys and is operative to rotate the second arm relative to the first arm as the first arm is driven to rotate by the driving mechanism, such that the distal pivotal ends of the first and second arms are configured to always lie along a substantially straight line.

20 (FIG. 3)