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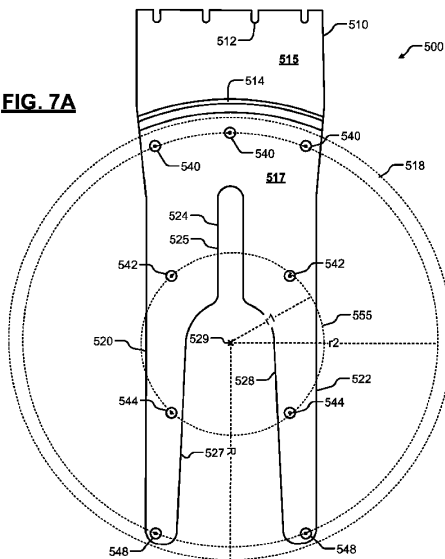
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(54) Title: END EFFECTOR AND SUBSTRATE TRANSFER SEQUENCE FOR THICK, HEAVY, AND/OR BOWED SUBSTRATES WITH LIMITED VERTICAL CLEARANCES

FIG. 7A



(57) Abstract: An end effector includes a body including a first body portion connected to a robot wrist; a second body portion extending from the first body portion and including a first arm, a second arm, and a slot between the first and second arms; and a plurality of contact pads. The plurality of contact pads include N contact pads arranged on the second body portion adjacent to the first body portion, where N is an integer greater than two; M contact pads arranged on distal ends of the first arm and the second arm, respectively; P contact pads; and Q contact pads, where M, P, and Q are an integers greater than one. The P contact pads and the Q contact pads are located on the first arm and the second arm between the N contact pads and the M contact pads.

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