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(54) Title: DYNAMIC MASS ESTIMATION METHODS FOR AN INTEGRATED MOBILE MANIPULATOR ROBOT

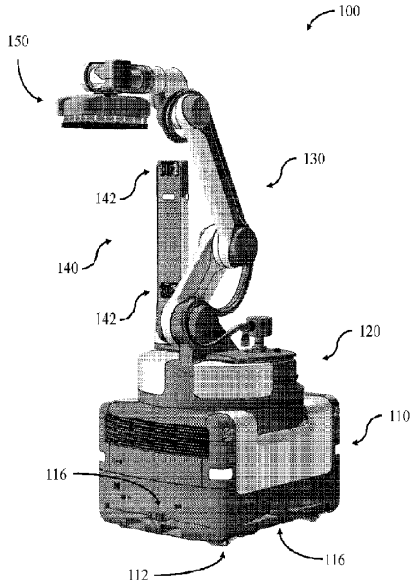


FIG. 1A

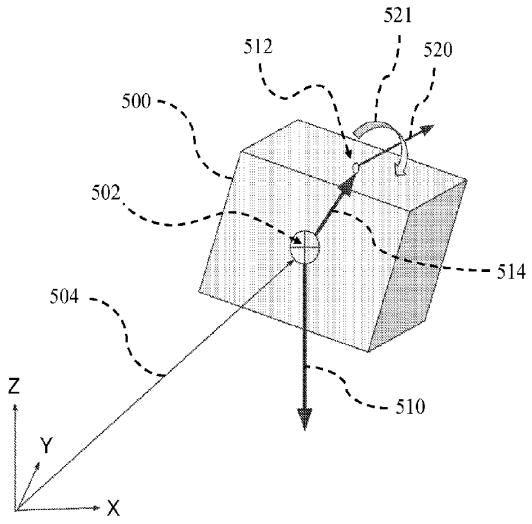


FIG. 4A

(57) Abstract: A method of estimating one or more mass characteristics of a payload manipulated by a robot includes moving the payload using the robot, determining one or more accelerations of the payload while the payload is in motion, sensing, using one or more sensors of the robot, a wrench applied to the payload while the payload is in motion, and estimating the one or more mass characteristics of the payload based, at least in part, on the determined accelerations and the sensed wrench.

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