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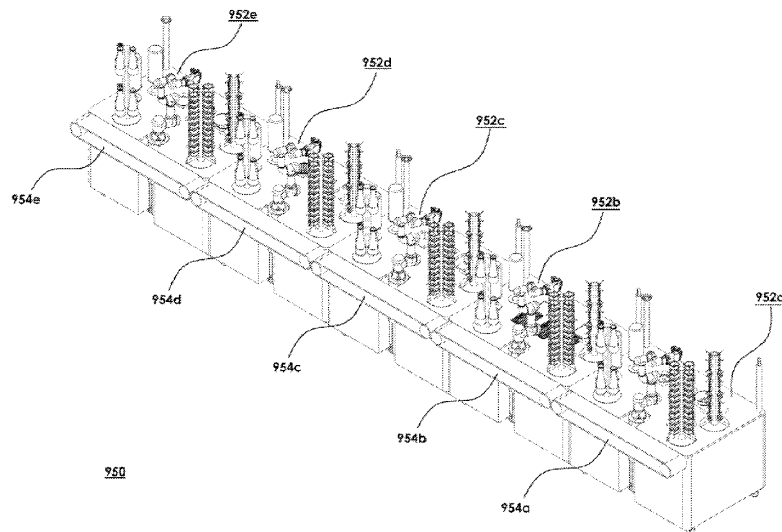


FIG. 108

(57) Abstract: The present disclosure is directed to methods, computer program products, and computer systems of a robotic kitchen hub for minimanipulation library adjustments and calibrations of multi-functional robotic platforms for commercial and residential environments with artificial intelligence and machine learning. The multi-functional robotic platform includes a robotic kitchen for calibration with either a joint state trajectory or in a coordinate system like a cartesian coordinate for mass installation of robotic kitchens. Calibration verifications and minimanipulation library adaptation and adjustment of any serial model or different models provide scalability in the mass manufacturing of a robotic kitchen system. A robotic kitchen with multi-mode provides a robot mode, a collaboration mode and a user mode which a particular food dish can be prepared by the robot, a collaboration on sharing tasks between the robot and a user, or the robot serves as an aid for the user to prepare a food dish.

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