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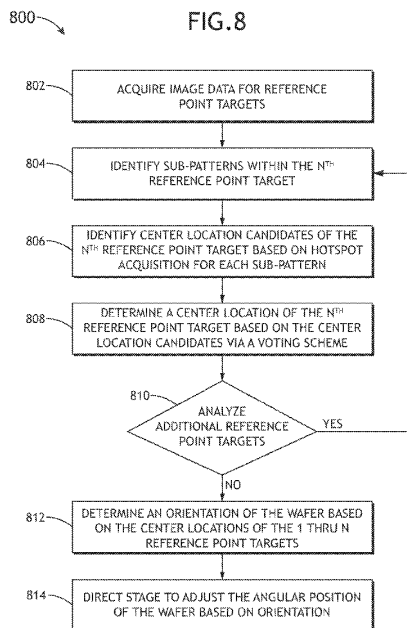
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(54) **Title:** SYSTEM, METHOD, AND TARGET FOR WAFER ALIGNMENT



(57) **Abstract:** A wafer alignment system includes an imaging sub-system, a controller, and a stage. The controller receives image data for reference point targets and determines a center location for each of the reference point targets. The center location determination includes identifying sub-patterns within a respective reference point target and identifying multiple center location candidates for the respective reference point target. The step of identifying the multiple center location candidates for the respective reference point target includes: applying a model to each identified sub-pattern of the respective reference point target, wherein the model generates a hotspot for each sub-pattern that identifies a center location candidate for the respective reference point target. The controller is further configured to determine a center location for the respective reference point target based on the multiple center location candidates and determine an orientation of the wafer based on the center location determination for the reference point targets.

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