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(54) Title: FIDUCIAL-FILTERING AUTOMATIC WAFER CENTERING PROCESS AND ASSOCIATED SYSTEM

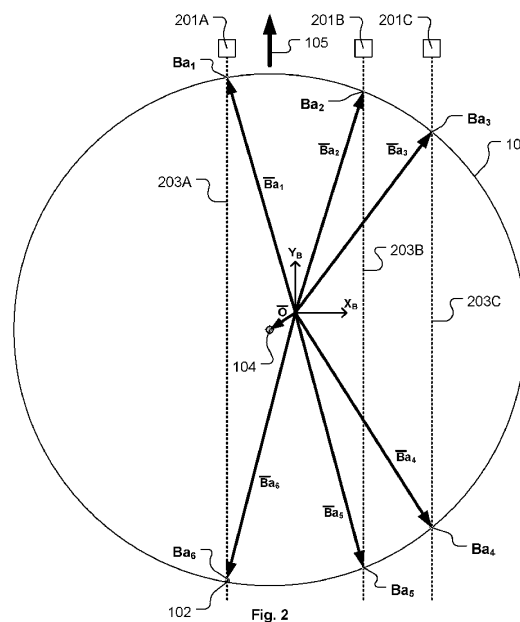


Fig. 2

(57) Abstract: Each sensor in an array of sensors detects and signals when an edge of a wafer passes by the sensor on a wafer handling component of a robot. A number (N) of detected wafer edge locations is determined. Each detected wafer edge location is a set of coordinates (x, y) in a coordinate system of the wafer handling component. For each unique set of (N-1) of the number (N) of detected wafer edge locations, an estimated wafer offset is determined that substantially minimizes a performance index value. The estimated wafer offset is a vector extending from a center of the coordinate system of the wafer handling component to an estimated center location of the wafer. A final wafer offset is identified as the estimated wafer offset that has a smallest corresponding performance index value. The final wafer offset is used to center the wafer at a target station.

[Continued on next page]

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