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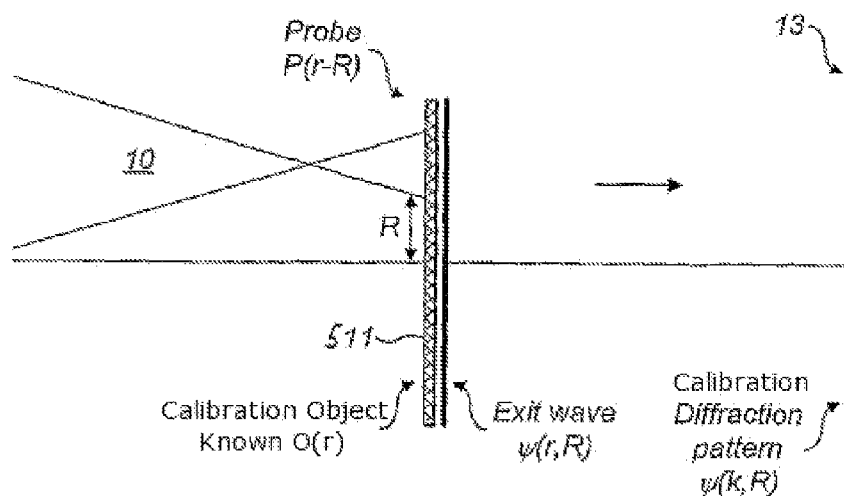
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**FIG. 5**

(57) Abstract: A method of providing image data for constructing an image of a region of a target object, comprising providing a reference diffraction pattern of a reference target object; determining an initial guess for a probe function based upon the reference diffraction pattern; and determining, by an iterative process based on the initial guess for the probe function and an initial guess for an object function, image data for a target object responsive to an intensity of radiation detected by at least one detector.