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1010822.3 28 June 2010 (28.06.2010) GB(71) Applicant (for all designated States except US): **PHASE FOCUS LIMITED** [GB/GB]; The Bioincubator, 40 Leavygreave Road, Sheffield, South Yorkshire S3 7RD (GB).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **MAIDEN, Andrew** [GB/GB]; Phase Focus Limited, The Bioincubator, 40 Leavygreave Road, Sheffield, South Yorkshire S3 7RD (GB).(74) Agent: **VINCENT JENNINGS**; Harrison Goddard Foote, Fountain Precinct, Balm Green, Sheffield, South Yorkshire S1 2JA (GB).

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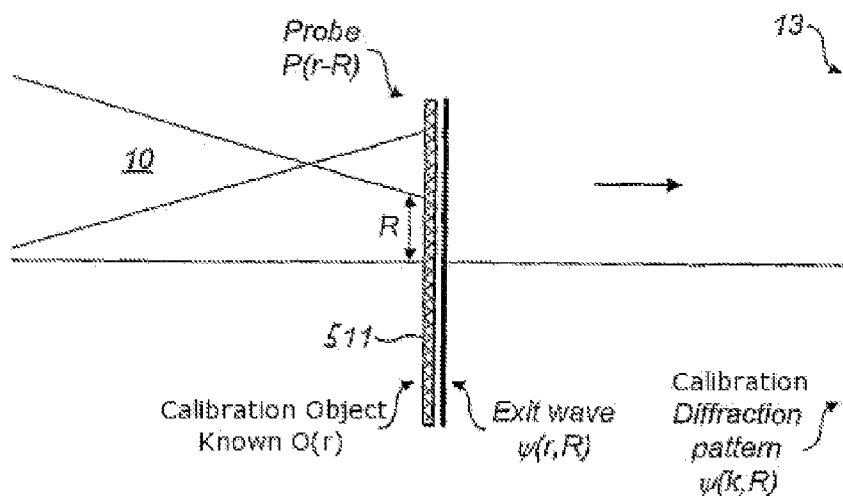
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**FIG. 5**

(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.