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(54) **SUPER RESOLUTION METHODS FOR ELECTRO-OPTICAL SYSTEMS**

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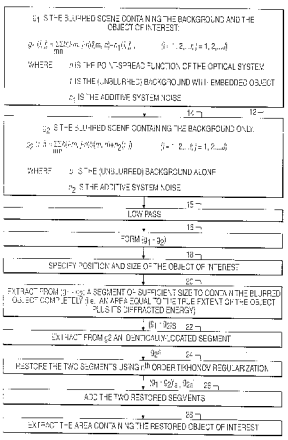
(57) **ABSTRACT**

In an optical system having a detector means and processor means in which imaging data is obtained comprising noisy blurred scene data containing an object to be reconstructed, and noisy blurred background data of the same scene, a method for increasing the spatial resolution of the imaging data produced by the optical system, comprising the steps of converting the imaging data into a first matrix, regularizing the first matrix by performing nth order Tikhonov regularization to the first matrix to provide a regularized pseudo-inverse (RPI) matrix and applying the RPI matrix to the first matrix to provide a reconstructed image of the object.

21 Claims, 17 Drawing Sheets