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(54) Title: METHOD AND SYSTEM FOR CONTROLLING GROWTH OF A SILICON CRYSTAL

(57) Abstract

A method and system for determining melt level and reflector position in a Czochralski single crystal growing apparatus. The crystal growing apparatus has a heated crucible containing a silicon melt from which the crystal is pulled. The crystal growing apparatus also has a reflector positioned within the crucible with a central opening through which the crystal is pulled. A camera generates images of a portion of the reflector and a portion of a reflection of the reflector visible on the top surface of the melt. An image processor processes the images as a function of their pixel values to detect an edge of the reflector and an edge of the reflection in the images. A control circuit determines a distance from the camera to the reflector and a distance from the camera to the reflection based on the relative positions of the detected edges in the images. The control circuit determines at least one parameter representative of a condition of the crystal growing apparatus based on the determined distances and controls the apparatus in response to the determined parameter.

