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(54) Title: CATHODE CURRENT CONTROL SYSTEM FOR A WAFER ELECTROPLATING APPARATUS

(57) Abstract

A cathode current control system employing a current thief (95) for use in electroplating a wafer (55) is set forth. The current thief (95) comprises a plurality of conductive segments (130) disposed to substantially surround a peripheral region of the wafer (55). A first plurality of resistance devices (not shown) are used, each associated with a respective one of the plurality of conductive segments (130). The resistance devices are used to regulate current through the respective conductive segment (130) during electroplating of the wafer (55). Various constructions are used for the current thief (95) and further conductive elements, such as fingers (235), may also be employed in the system. As with the conductive segments, current through the fingers (235) may also be individually controlled. In accordance with one embodiment of the overall system, selection of the resistance of each respective resistance device is automatically controlled in accordance with predetermined programming.

