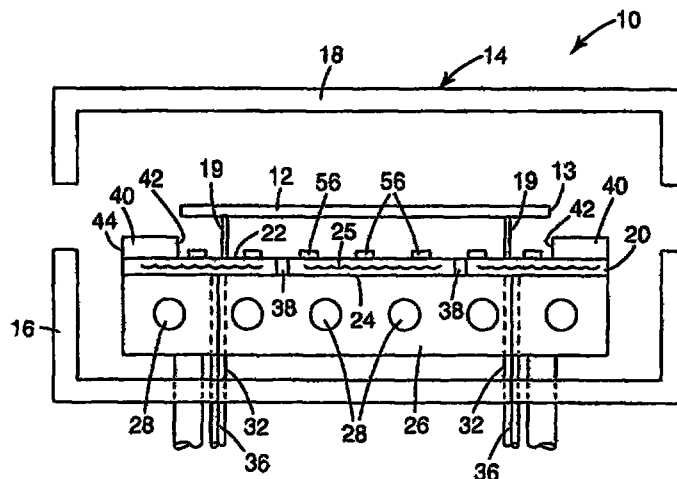




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(54) Title: COMBINATION BAKE/CHILL APPARATUS INCORPORATING LOW THERMAL MASS, THERMALLY CONDUCTIVE BAKEPLATE

**(57) Abstract**

Systems and methods that make it possible to rapidly cycle a workpiece (12) through a temperature/time profile over a wide temperature range, e.g., 0 °C to 350 °C, without having to lift and transfer the workpiece between separate baking and chilling mechanisms. The present invention is based in part upon the concept of using a low thermal mass, thermally conductive heating member (20) to support a workpiece, such as a microelectronic device, during both baking and chilling operations. While supporting the workpiece on one surface, the other surface of the heating member can be brought into and out of thermal contact with a relatively thermally massive chill plate (26) to easily switch between baking and chilling operations. A simple mechanism is all that is required to either physically separate the heating member (20) and chill plate (26) to accomplish the most rapid heating, or the simple mechanism adjoins the heating member and chill plate to accomplish the most rapid chilling. This approach completely eliminates the need to rely upon a workpiece handling mechanism in order to lift and transfer a microelectronic device from a heating member to a separate chill plate. This approach also allows both chilling and baking to occur from a direction below the microelectronic device.