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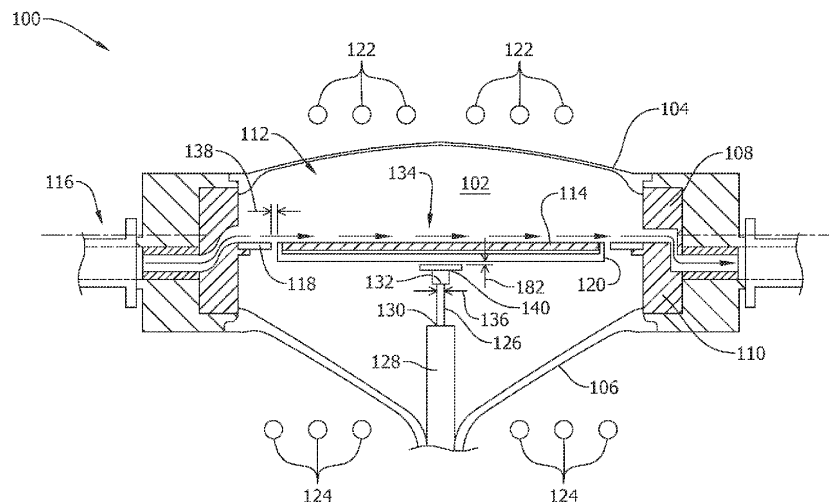


FIG. 3

(57) Abstract: A reaction apparatus contacts a process gas on a semiconductor wafer during a wafering process. The semiconductor wafer defines a center region. The reaction apparatus includes an upper dome, a lower dome, a shaft, and a cap. The lower dome is attached to the upper dome, and the upper dome and the lower dome define a reaction chamber. The cap is positioned on the shaft within the reaction chamber for reducing heat absorbed by the center region of the semiconductor wafer. The cap is attached to a first end of the shaft. The cap includes a tube and a disc. The tube defines a tube diameter larger than a shaft diameter of the shaft. The tube circumscribes the first end of the shaft. The disc is attached to the tube and is positioned to block radiant heat from heating the center region of the semiconductor wafer.

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