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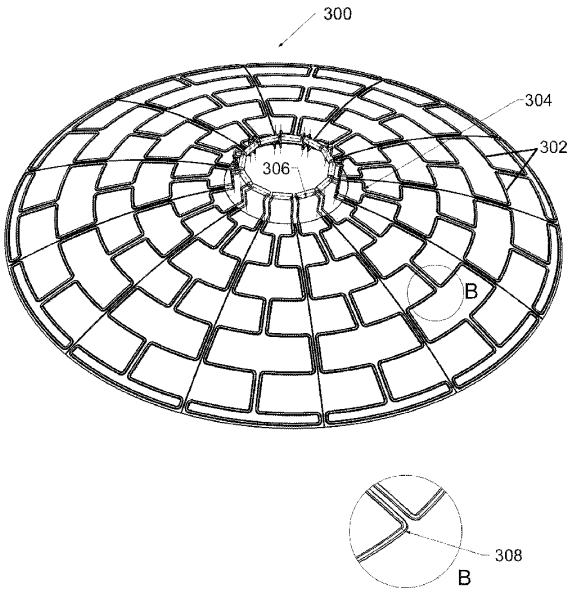
(54) Title: ANTENNA-RADIATOR DESIGNS



(57) Abstract: A novel approach to satellite thermal management involves incorporating the capabilities of a radiator into the main antenna of said satellite. This is accomplished by combining two concepts: First, the composite antenna face sheets are constructed of a layup that offers excellent in plane thermal conductivity. Second, the highly conductive antenna is coupled to thermal transportation hardware that is also coupled to the payload of the spacecraft. By attaching these components in this way, the spacecraft gains access to large amount of surface area for radiation that would otherwise be unavailable, allowing spacecraft to employ considerably higher power payloads than their size would imply and reduce the number of additional radiating surfaces needed to satisfy the spacecraft's thermal requirements.

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