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(54) **Title**: HIGH-EFFICIENCY SOLAR CELL STRUCTURES AND METHODS OF MANUFACTURE

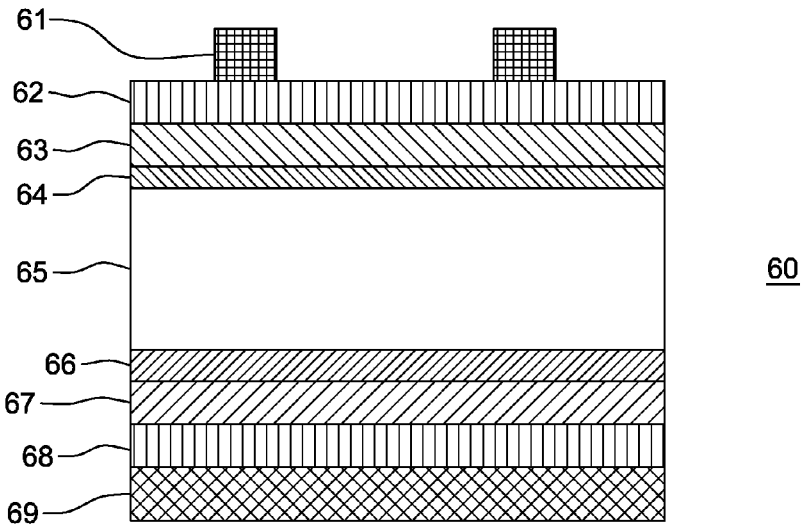


FIG. 6

(57) **Abstract**: Solar cells of varying composition are disclosed, generally including a central substrate, conductive layer(s), antireflection layers(s), passivation layer(s) and/or electrode(s). Multifunctional layers provide combined functions of passivation, transparency, sufficient conductivity for vertical carrier flow, the junction, and/or varying degrees of anti-reflectivity. Improved manufacturing methods including single-side CVD deposition processes and thermal treatment for layer formation and/or conversion are also disclosed.

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