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(54) **Title**: METHODS OF FABRICATING SEMICONDUCTOR STRUCTURES AND DEVICES USING QUANTUM DOT STRUCTURES AND RELATED STRUCTURES

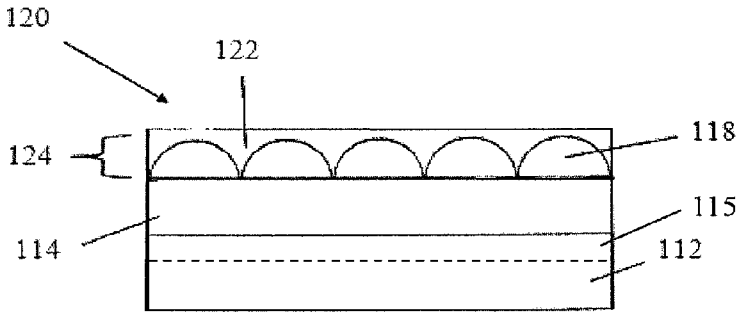


FIG. 3

(57) **Abstract**: Methods of fabricating photovoltaic devices include forming a plurality of subcells in a vertically stacked arrangement on the semiconductor material, each of the subcells being formed at a different temperature than an adjacent subcell such that the adjacent subcells have differing effective band gaps. The methods of fabricating also include inverting the structure, attaching another substrate to the second semiconductor material, and removing the substrate. For example, each of the subcells may comprise a III nitride material, and each subsequent subcell may include an indium content different than the adjacent subcell. Novel structures may be formed using such methods.

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