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(54) Title: HIGH-CONTRAST WAVEGUIDES WITH ENGINEERED SURFACES

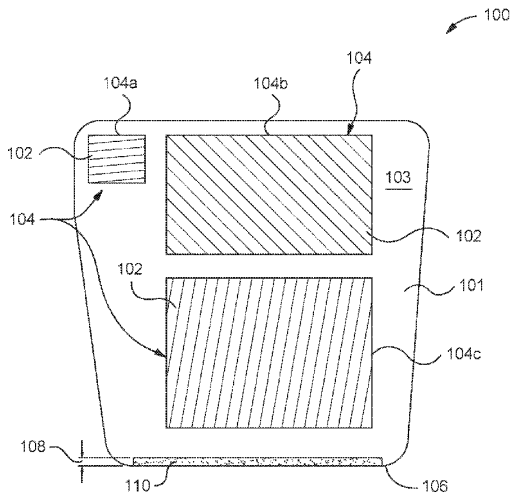

FIG. 1

(57) Abstract: Embodiments of the disclosure provided herein include systems and methods for waveguide combiners having roughened portions. The waveguide includes a substrate having an edge, an input coupling grating having a first plurality of structures and an output coupling grating having a second plurality of structures disposed over the substrate. The waveguide also includes at least one roughened segment formed into the substrate along the edge between the edge and at least one of the input coupling grating and the output coupling grating, the at least one roughened segment having roughening elements disposed in the substrate.

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