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(71) Applicant: **APPLIED MATERIALS, INC.** [US/US];
3050 Bowers Avenue, Santa Clara, California 95054 (US).

(72) Inventors: **MESSER, Kevin**; c/o Applied Materials, Inc.,
Law Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara,
California 95054 (US). **SELL, David**; c/o Applied Materials,
Inc., Law Dept., M/S 1269, 3050 Bowers Avenue, Santa

Clara, California 95054 (US). **BHARGAVA, Samarth**; c/o
Applied Materials, Inc., Law Dept., M/S 1269, 3050 Bowers
Avenue, Santa Clara, California 95054 (US).

(74) Agent: **DOUGHERTY, Chad M.** et al.; PATTERSON +
SHERIDAN LLP, 24 Greenway Plaza, Suite 1600, Houston,
Texas 77046 (US).

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(54) Title: RAINBOW FREE WAVEGUIDE COMBINER

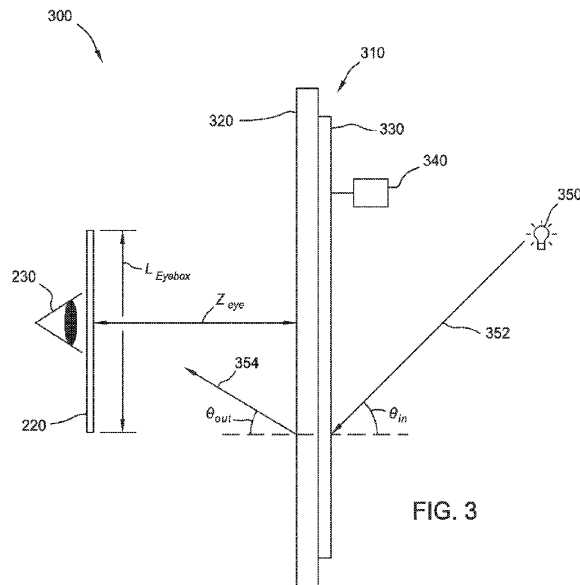


FIG. 3

(57) Abstract: A rainbow-free waveguide display, a near-eye display incorporating the rainbow-free waveguide, and methods of manufacturing the rainbow-free waveguide are provided. The display includes a waveguide display configured to direct image light to an eyebow plane having a length (L_{Eyebow}) and to a user's eye. The waveguide display includes a waveguide combiner and an out-coupler grating, wherein the out-coupler grating has a grating period Koc such that all angles of incidence θ_{in} of light from an external light source, result in diffracted angles θ_{out} , that miss the user's eye.

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