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- (71) **Applicant:** JADE BIRD DISPLAY (SHANGHAI) LIMITED [CN/CN]; 1889 Hongyin Road, Pudong, Shanghai 201306 (CN).
- (72) **Inventor; and**
- (71) **Applicant:** LI, Qiming [CN/US]; 1876 Smarty Jones St., Albuquerque, New Mexico 87123 (US).
- (72) **Inventors:** XU, Qunchao; 1889 Hongyin Road, Pudong, Shanghai 201306 (CN). XU, Huiwen; 1889 Hongyin Road, Pudong, Shanghai 201306 (CN).
- (74) **Agent:** ZHENG, Hang et al.; c/o Morgan, Lewis & Bockius LLP, 1111 Pennsylvania Ave NW, Washington, District of Columbia 20004 (US).
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(54) **Title:** SYSTEMS AND METHODS FOR MULTI-COLOR LED PIXEL UNIT WITH HORIZONTAL LIGHT EMISSION

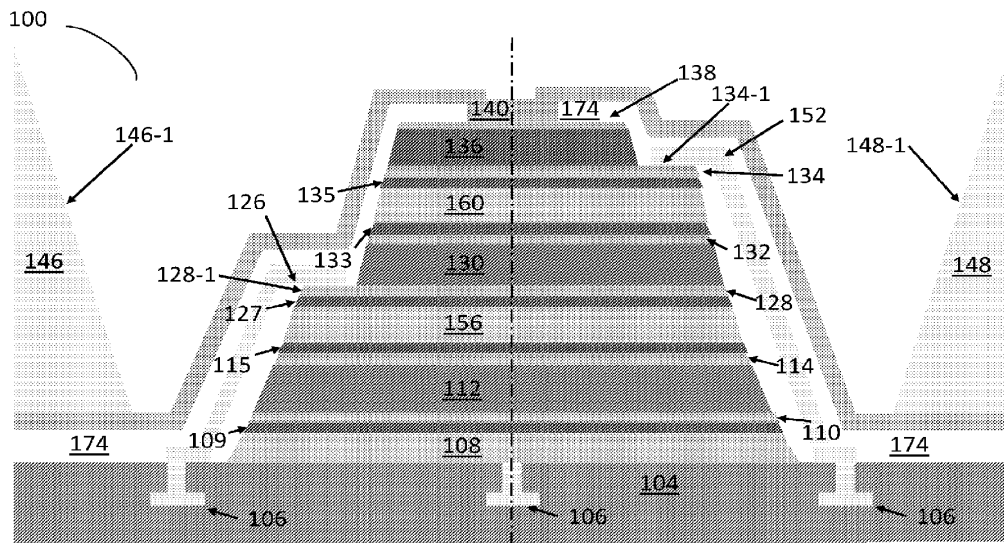


Figure 1B

(57) **Abstract:** A micro multi-color LED device includes two or more LED structures for emitting a range of colors. The two or more LED structures are vertically stacked to combine light from the two more LED structures. Light from the micro multi-color LED device is emitted horizontally from each of the LED structures and reflected upward via some reflective structures. In some embodiments, each LED structure is connected to a pixel driver and/or a common electrode. The LED structures are bonded together through bonding layers. In some embodiments, planarization layers enclose each of the LED structures or the micro multi-color LED device. In some embodiments, one or more of reflective layers, refractive layers, micro-lenses, spacers, and reflective cup structures are implemented in the device to improve the LED emission efficiency. A display panel comprising an array of the micro tri-color LED devices has a high resolution and a high illumination brightness.

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