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(54) **HIGH-EFFICIENCY LINE-FORMING OPTICAL SYSTEMS AND METHODS**

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(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

A line-forming optical system and method are disclosed that form a line image with high-efficiency. A method includes forming a laser beam having a first intensity profile with a Gaussian distribution in at least a first direction and passing at least 50% of the laser beam in the first direction to form a first transmitted light. The method also includes: focusing the first transmitted light at an intermediate image plane to define a second intensity profile having a central peak and first side peaks immediately adjacent the central peak; then truncating the second intensity profile within each of first side peaks to define a second transmitted light; and then forming the line image at an image plane from the second transmitted light.

15 Claims, 6 Drawing Sheets

