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(54) **SEMICONDUCTOR OPTICAL CRYOCOOLER**

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F25D 23/12	(2006.01)
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(58) **Field of Classification Search**

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See application file for complete search history.

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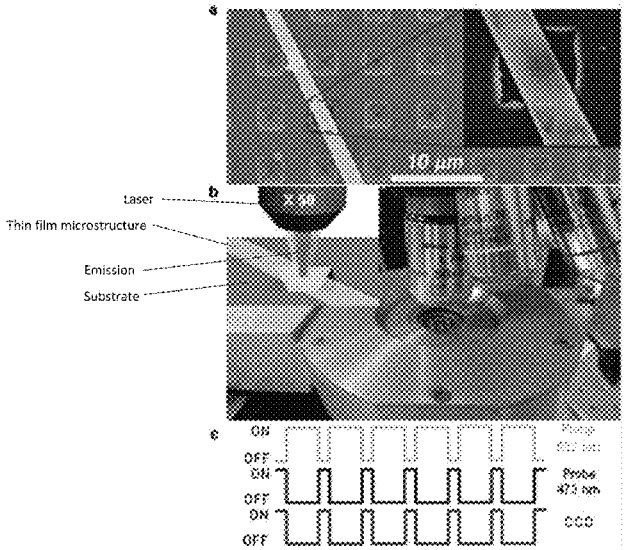
(57) **ABSTRACT**

There is provided a laser cooling apparatus including: a laser for providing an emission; a silicon-on-insulator substrate; and a thin film microstructure thermally anchored to the silicon-on-insulator substrate, the thin film microstructure being made from a material selected from either a II-VI binary compound semiconductor or a II-VI tenary compound semiconductor.

13 Claims, 16 Drawing Sheets